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Neat IOTA 5.0
Panasonic 4K BD
GoldenEar SuperSub X
Orbitsound One
Nvidia Shield TV
BenQ gaming projector

SUPERSIZE YOUR 4K!

Acer's V9800 projector gives Ultra HD Blu-ray big appeal

PLUS! Sony's 55in XE90 LED is a mid-range marvel

Arcam, arise!
Flagship processor delivers Atmos thrills

LG's OLED icon
Hang-on-the-wall TV

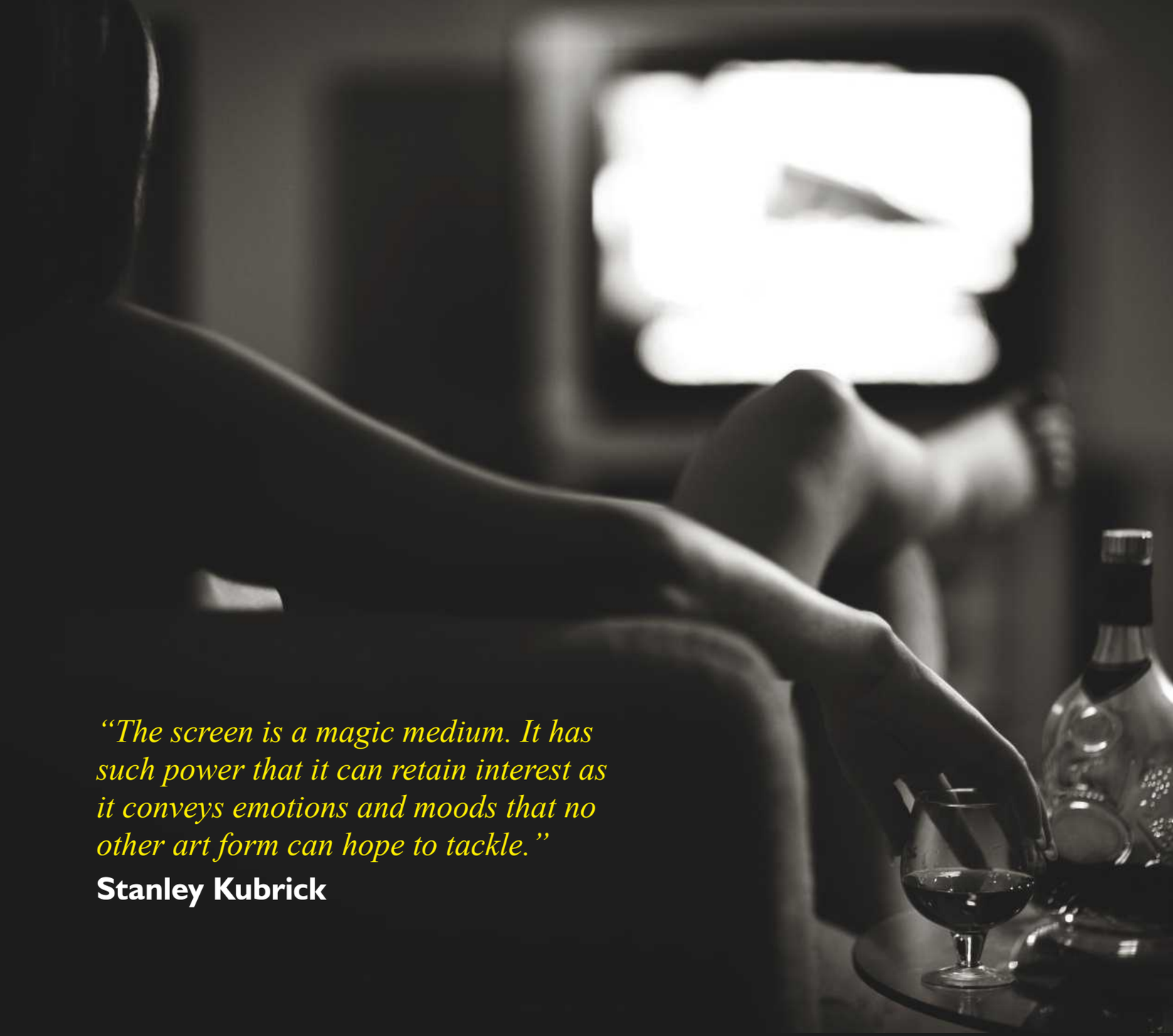
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Welcome



We are witnessing a shake-up of the 4K projector world. DLP models (featured this issue in the shape of Acer's V9800) are beginning to arrive at AV retailers. And it's about time, too.

Texas Instruments' chip technology has long been the basis of the more affordable end of the Full HD market, leaving rival solutions (SXRD, LCD, D-ILA) to cater for those with bigger budgets and ambitions. Now that DLP has been given a pixel-push, we should see a similar effect. Brands including Acer, Optoma, BenQ, ViewSonic and Vivitek are all DLP devotees. As more 4K models are launched, that means a greater choice for buyers, greater competition and more palatable prices. I remember when the first Full HD projector was released with a £1,000 price tag. I look forward to that happening again with 4K!

That's probably some time off. Luckily we have plenty to thrill us while we wait. *Planet Earth II* on 4K Blu-ray? Oh, go on then...

Mark Craven
Editor



MENU









CONTRIBUTORS



John Archer: The UK's most experienced TV tester cut his teeth as an early *HCC* staffer



Jon Thompson: Film producer and post-production expert delves deep into Hollywood and AV



Steve May: *HCC*'s former Editor-in-Chief is one of the UK's most respected AV journos



Martin Pipe: Technical expert Martin is renown throughout the home cinema industry



Richard Stevenson: Industry veteran and former Editor of UK CE trade journal *ERT*



Adrian Justins: Made his name as the editor of *What Video & TV* and *What Home Cinema*

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'The AV860 gives a performance worthy of any high-end screening room'









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DYNAUDIO

BULLETIN

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Lighting the OLED way

Philips 55POS9002→ www.philips.co.uk



Philips' second-generation OLED TV retains the 4K resolution and three-sided Ambilight talents of its POS901 predecessor, but aims to bring an increase in image quality via the brand's new P5 processor silicon. HDR support has been expanded to include Hybrid Log-Gamma (in addition to HDR 10, but not Dolby Vision), while Android's 'M' OS bolsters the user experience. Currently, the set is only promised at 55in, with pricing and availability yet to be confirmed. See p12 for more...

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A thoroughly Traditional trio...

Ciao bella...

Sonus faber Homage Tradition → www.absolutesounds.com

More sumptuous-looking loudspeakers are rolling out of Sonus faber's Italian workshop. The brand's revamped Homage Tradition range stretches to two floorstanding models (including the Serafino, pictured right), a standmount and – still to be released – the Vox centre channel. Pricing begins at a reassuringly expensive £13,500 for a pair of the Guarneri standmounts, but your money gets you Italian leather front baffles, bespoke transducers and very jealous friends.

SACD revival comes at a cost



German audio specialist T+A elektroakustik is targeting music fans who refuse to part with their SACD collection with its new MP 3100 HV media player. In addition to its 'high precision' SACD drive, this £12,690 box of tricks also sports T+A's new high-res streaming board, which provides access to TIDAL, Qobuz and Deezer music services, plus 'net radio, Bluetooth and your home network via LAN and Wi-Fi. Audiophile niceties include isolated signal paths for DSD and PCM.
www.ta-hifi.de/en

Take a trip to the Azores



In the market for a more stylish approach to room acoustics? Then check out Artnovion's new Azores range of wall- and ceiling-mounted acoustic panels. Consisting of seven shapes (including semi-circles and triangles) and available in 31 colours – the Azores range was 'developed for the high end market' and, says Artnovion, allows you the freedom to design your perfect acoustic treatment. The panels are equipped with a mechanical, adjustable fixing system.
www.artnovion.com

UHD BD recorder debuts

But don't expect Panasonic's deck to get a UK release any time soon

Panasonic has unveiled the world's first 4K UHD Blu-ray recorder combi, and announced a second OLED screen for Summer launch, the EZ952.

The DMR-UBC90, which will only be released in the German and Austrian markets, can record free-to-air 4K content from UHD channels delivered by satellite operator SES. The recorder is also compatible with Hybrid Log-Gamma broadcast HDR.

4K video is recorded to a 2TB hard drive. The deck will also play 4K Blu-ray discs, in addition to regular Blu-rays, DVDs and CDs. It uses the same HCX processor as Panasonic's UHD Blu-ray players, and supports 4K streaming from 'net services.

Keisuke Shinno, hardware designer on the UBC90, told *HCC* that the recorder could be networked with a second UBC90, and the recordings on one hard drive played by the second deck. Availability, though, is limited. 'We can't even release this in Japan, as there are no 4K channels to record,' he says.

Interestingly, the new deck features a 10-bit video output mode, while the brand's UB700 and UB900 players launched with just 8-bit and 12-bit options. Panasonic's chief engineer Kazuhiko Kouno says users who experience image problems with the deck's 12-bit mode, typically colour banding, can select the 10-bit priority option. 'I think it's only a small issue. Basically our 12-bit mode is automatically changed, depending on the EDID of the TV. If the connected TV is capable of 12-bit, that's what the deck delivers. If the TV shows 10-bit, we output as 10-bit. Strangely, some TVs have issues when connecting as 12-bit, so this is optional.'

Panasonic says it will add a 10-bit priority output to its UB900 and UB700 decks via firmware update.



4K HDD recorder – a UK no-show

More OLED TVs incoming

Meanwhile, the incoming EZ952 OLED TV will be available in 65in and 55in screen sizes, and uses the same Studio Colour HCX2 processor as the flagship EZ1002. However, the EZ952 will not feature the EZ1002's Absolute Black Filter, and lacks some of that model's professional studio functionality. It also boasts an integrated sound system and conventional pedestal stand.

The models are expected to launch with THX and Ultra HD Premium certification. The 65in EZ1002, and 65in and 55in EZ952 will all be available from June. A 77in version of the EZ1002 will follow in the Autumn. Prices have yet to be announced.

Both screens will be HDR 10 and HLG compatible out of the box.

European product specialist Craig Cunningham told *HCC* that the EZ1002 will offer a peak brightness of 1,000 nits, while the new EZ952 has a luminance peak of 'around 950 nits.' He also says Panasonic's experience developing plasma TVs has been a key element in fine-tuning the new OLEDs, particularly in regard to shadow detail. 'Our customers have been waiting for an OLED like this before they upgrade their old plasmas.'

Playlist...

Team *HCC* spins up its disc picks of the month

Miss Peregrine's Home for Peculiar Children (Ultra HD BD)



Amazing HDR visuals and Atmos audio make Tim Burton's latest a must-own for 4K fans.

The Crying Game (Blu-ray)



Delayed from 2016, the BFI's HD remaster is finally here and proves worth the wait.

The Love Witch (Blu-ray)



The stunning 1080p presentation of this retro-styled genre pastiche casts a spell on all who see it.

The Anderson Tapes (Blu-ray)



The classic Sean Connery crime caper receives a typically robust Blu-ray package from Indicator.

Phantom Boy (DVD)



This charming French cartoon cuts a surprisingly strong figure on DVD thanks to its old-school aesthetic.

At the 'plex...

Heading out to see a flick? Catch these this month

Guardians of the Galaxy Vol. 2



April 28: Marvel's gang of cosmic misfits (now including Baby Groot) head into the unknown as Peter 'Star-Lord' Quill goes looking for the truth about his parentage. Joining the fun are Kurt Russell and Sylvester Stallone.

My Life as a Courgette

May 05: Definitely not your typical 'toon, this Oscar-nominated stop-motion animation sees a young boy finding a new, makeshift family, after he's sent to an orphanage following the death of his drunken mother.

Alien: Covenant



May 12: Ridley Scott's *Prometheus* sequel/*Alien* prequel promises plenty of xenomorph action as it catches up with sinister synthetic David (Michael Fassbender) and his ongoing experiments with the Engineers' mysterious black goo...



CEDIA hopes for magic

Install awards head to Harry Potter studio, new categories announced

The venue for the 2017 CEDIA Awards has been revealed, and it's clear the custom install organisation is sure it's all set to be a spellbinding event – this year's gongs will be dished out at the Warner Bros. Studio Tour London: The Making of Harry Potter. Which means AV experts chatting about HDMI specifications in the Hogwarts Great Hall, before gathering on Platform 9 3/4 to find out who's won.

2017 sees the celebratory night moved back in the calendar to September 29th, where previously it has been held in July. This will allow the UK/EMEA event to also announce the winners of the CEDIA Global Awards. These, described as 'the best of the best', highlight home cinema and media room from across CEDIA's three regions. The current winner of the global Best Home Theatre award can be gawped at on p36.

'Year on year, the quality and innovation of the projects put forward continues to astound us all,' says Matt Nimmons, Managing Director of CEDIA EMEA. 'We're sure that the magic found within [the Harry Potter] films will be replicated in the projects we see and celebrate.'

As usual, the CEDIA Awards will feature price-defined categories, meaning that it's not only the cost-no-object projects that earn praise, although the levels have been revised. Bands for Best Media Room will now cover entertainment spaces under £20,000, from £20,000-£80,000 and £80,000 and above. Home cinema installations completed for less than £40,000 will be awarded alongside more expensive theatres tipping the scales at over £240,000.

There are also new categories. The Best Auto, Marine and Aircraft project will showcase the work AV installers do outside of the home, while the criteria for the Best Special Project is currently being kept as a surprise.

Getting technical

CEDIA award hopefuls submit detailed information about their finished projects, covering calibration practices, room construction and hardware specification. These are then analysed by a judging panel to assess whether they meet industry standard technical criteria, plus – presumably – make others green with envy. As usual, we'll be picking out our favourite theatres (be they winners or not) in an issue later this year.

The Awards are free to enter, but open to CEDIA member companies only – unfortunately your D.I.Y. movie den cannot be judged. You can always send that in to *HCC*, though. We'd love to take a look!

Yamaha powers up new AVRs

Four-strong RX-V83 series announced, plus Tidal and Deezer added to MusicCast

Yamaha has announced four new additions to its family of AV receivers. Due for release across the next couple of months, the new RX-V83 series models all support 4K HDR passthrough (including Dolby Vision) and MusicCast wireless multiroom audio.

The range kicks off in May with the 5.1-channel RX-V383 and RX-V483, with the 7.2-channel RX-V583 and RX-V683 models following in June. Prices were still TBC at the time of going to press.

As befits the additional channels, the RX-V583 and RX-V683 add support for Dolby Atmos and DTS:X to the feature count. Meanwhile, all four of the AVRs offer YPAO (Yamaha Parametric Acoustic Optimizer) calibration tech and Bluetooth as standard – with all but the RX-V383 including Bluetooth transmission as part of MusicCast, allowing you to connect a pair of wireless cans to your AVR.

Yamaha also confirmed support for the Tidal and Deezer music services on its 2017 network AVRs. Older MusicCast products will get a firmware upgrade. http://uk.yamaha.com

The RX-V83 series adds Dolby Vision passthrough to its HDMI talents



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Extras...

Small items that could make a big impression...

The Art of Boss Baby



We don't expect there will be any tantrums from animation fans when it comes to this look at the making of DreamWorks' latest animated movie. As well as the expected abundance of gorgeous concept art, author Ramin Zahed ensures that this £30 hardback provides real insight into the production, with plenty of input from both the Hollywood and Bangalore animation teams.

LEGO BrickHeadz: Series 1



Inspired by the popularity of the Funko Pop! vinyl figures, LEGO has launched its own range of 'cute' film-related figurines for fans to collect and build. The first wave includes eight DC and Marvel characters, plus *Beauty and the Beast*'s titular duo and Captains Jack and Salazar from the new *Pirates of the Caribbean* sequel – all are priced at £10 each.

The Motion Picture Toilet Award



Promising to 'make short work of any Meryl Streaks or Al Poocinos' soiling your pristine toilet bowl, this Academy Award-inspired loo brush wants to add some Hollywood glamour to your bathroom. Or you could just sit there, cradle it in your arms and practice your acceptance speech over and over. Available for £10 from www.thefowndry.com.

Philips upgrades TV tech

AV brand opines OLED, queues Quantum Dot and fancies Freeview Play

Philips has been busy. The brand is stepping up its commitment to OLED this Summer with a second OLED screen, and introducing Freeview Play tuners across most of its range. It is also prepping its first Quantum Dot LED LCD TVs, which will be unveiled at the IFA tech show in September.

HCC recently had an opportunity to preview the new 55in OLED 55POS9002 model, which is expected to be priced below the brand's 901F debut OLED, at Philips' annual trade unveil in Madrid.

The new 4K HDR flatscreen drops the integrated soundbar seen on its predecessor, but ushers in a revamped P5 picture processing engine, said to offer a 50 per cent performance and features gain over the brand's current Perfect Pixel Ultra HD engine. Image upgrades include a new DNR system, which we're told is able to better reduce noise without image detail blurring or smearing.

The set will also boast a Freeview Play tuner, bringing a full complement of mainstream catchup TV channels to Philips tellies for the first time. Indeed, Freeview Play is coming to all Philips 2017 Smart model models.

'We're now catching up on catch-up,' quipped Graham Speake, UK MD of Philips TP Vision. 'We'll have Freeview Play on our Linux TVs from June, and on Android TVs from July. Bringing a Smart TV to market without Freeview Play is not on our agenda.'

Like the 901F, the 9002 OLED also has three-sided Ambilight, but boasts a central 'Cradle' stand, making it easier to accommodate.

The new TV is significantly brighter than its predecessor too, offering a peak light output of 750 nits. Speake says he expects the set to earn Ultra HD Premium certification. It will also be firmware updated for HLG HDR.

Up-market design

At its March showcase, the company also took the wraps off a new 7502 range. These edge-lit UHD TV models, again with three-sided Ambilight, will be available in 49-, 55- and 65in screen sizes and use a 100Hz native panel.

Compatible with HDR 10 and HLG, offering a 400-nit peak light output, the 7502 comes with an integrated 45W soundbar. Design-wise it's decidedly up-market, with a dark brushed aluminium bezel and open-frame central stand.

Like the new OLED model, the 7502 runs the P5 picture processing engine. This uses a single-chip design, whereas the Perfect Pixel Ultra HD system employs three. Viewers can therefore expect significant image improvements, believes Philips, brought about by the faster transfer of data.



Graham Speake: 'Bringing a Smart TV to the market without Freeview Play is not on our agenda'

The company has also worked on upgrades to its entry-level 4K TV lineup. The budget 4K 6262 will offer two-sided Ambilight, and use the Linux Smart platform, offering Freeview Play alongside Netflix and Amazon 4K streaming. Sizes available will be 43in, 49in and 55in. Joining it is the Android-powered 4K and HDR-compatible 6412, which will range up to 65in.

AV enthusiasts should also look out for the 6482, available in 49in and 55in guise. This three-sided Ambilight model is the most affordable in the Philips lineup to include a wide colour gamut panel and HDR with 400-nit peak brightness.

Quantum leap

The most intriguing news to emerge from the Spanish trade show was Philips' adoption of Quantum Dot technology. While it offered little concrete info, *HCC* witnessed an engineering demonstration that compared an early version of an upcoming Quantum Dot 8 Series screen, *sans* P5 processing, with last year's 8601 equivalent. The new model will be 'a Quantum Dot film TV with 1,000-nit brightness,' Director of product planning and strategy Danny Tack told *HCC*. 'It's very promising for the future...'

And unlike the rest of the brand's 2017 LCDs, the QD model will employ a VA (rather than IPS) panel.

Philips says it is also working to integrate voice control, via Google Assistant, on its Android models. A Google Home speaker was used to play YouTube content, and control Hue lighting – albeit not without a few hiccups.



The 55POS9002 OLED is expected to earn UHD Premium certification

This month's top 10 news stories in handy, bite-sized chunks...

News x10



1 B&O taps into multiroom

Following on from last year's Cool Modern Collection, Bang & Olufsen has now introduced its Multiroom Collection. Promising a seamless experience, each of the featured wireless speakers can be controlled via mobile device or simply by tapping them; B&O claims that you just have to touch a speaker once and it will instantly unite with the rest of the setup. The Multiroom Collection currently consists of the BeoSound 1, BeoSound 2, BeoSound 35, BeoPlay M5, BeoPlay A9 and BeoPlay A6.

2 More 4K for PS4 Pro

Sony has added extra support for 4K video to its PS4 Pro console with a firmware upgrade. The PS4 Pro will now play 4K MP4 files stored on a USB stick or local network, on top of previously available 4K streaming services, including Netflix and Amazon.

3 Xbox One upgrades audio

Meanwhile, Microsoft has given its Xbox One a major audio boost. A recent upgrade means the console's Blu-ray player now supports bitstream passthrough, allowing your receiver to decode audio natively. Better still: the company says that all bitstream formats are supported, including Dolby Atmos and DTS:X.

4 BBC is a natural fit for UHD

The decision to release the landmark natural history series *Planet Earth II* on Ultra HD Blu-ray (see p107) has paid off for BBC Worldwide, with the 4K disc reportedly shifting an impressive 3,000 copies in its first week on sale in the UK. Hopefully this will encourage the company to release more TV shows on UHD BD in the future – *Blue Planet II* being the most obvious candidate.

5 Behind the curve

Anyone celebrating the apparent demise of curved TVs should note that Samsung isn't giving up on the concept. While Sony and LG have reverted to flatscreens, the QLED TV maker has no fewer than 22 curved displays set to launch around the world during the coming year.

6 Bigger, brighter cinema

Staying with Samsung, it used the recent CinemaCon 2017 trade conference in Las Vegas to show off its 'Theater of the Future'. Described as the world's first High Dynamic Range LED Cinema Screen, the 4K display is a whopping 34ft long and claims a peak brightness level (146fL) nearly ten times greater than that offered by standard cinema projectors. An 'innovative audio system' to partner the screen is currently being developed by Harman Professional Solutions' Cinema Group.

7 That sinking feeling

A poll commissioned by the Royal Albert Hall has seen the *Titanic* soundtrack crowned as the UK's favourite film score. In doing so it beat out the likes of *Chariots of Fire*, *Star Wars*, *The Great Escape, The Magnificent Seven*, *Back to the Future* and *Jurassic Park*. Pah!

8 Whoops!

In the last issue we said Paramount's US 4K BD release of *Arrival* included a region-free 1080p Blu-ray. It doesn't – our reviewer John Archer had a mix up with disc-spinners (and different releases). The Full HD platter is locked to Region A. Thanks to Des Dunne for pointing that out.

9 Restoration facility closes

Deluxe Entertainment Services Group closed its UK restoration department at the end of March. The world-class team at the facility had worked on a number of high-profile Blu-ray restorations over the years, including *Donnie Darko*, *The Passion of Joan of Arc* and *Zombie Flesh Eaters*.

10 Despicable Dolby

It appears that *Despicable Me* and its sequel will be the first UHD Blu-rays to include Dolby Vision HDR. Images of the disc sleeves released by Universal Pictures include the Dolby Vision logo and include the format in the video spec boxes – although both titles opt for DTS:X audio instead of Dolby Atmos. The two UHD Blu-rays are set for release in the US on June 6.



Premiere...

What's happening in the world of TV and films...

More Aliens on the way



Having returned to the *Alien* universe after three decades away with 2012's *Prometheus*, Ridley Scott is now holding onto the franchise as firmly as a Facehugger does its victim. While promoting *Alien: Covenant*, the septuagenarian filmmaker has now indicated that he has plans for four more films set before his 1979 sci-fi horror classic.

The Matrix lives again!

Are you ready to enter the Matrix again? Warner Bros. has set up a writers room dedicated to exploring ways of 'expanding' the franchise with *Rogue One*-style side stories. Apparently a 'young Morpheus' film is one of the front-runners.

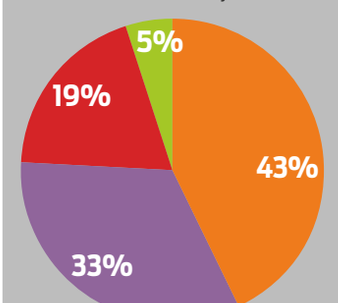
Holding out for a hero

Warner Bros. is also hunting for a new DC superhero flick to fast-track for release next year. With *Aquaman* delayed until December 2018 and *The Batman* still stuck in the Bat Cave, the studio is now without a comic book blockbuster for 2018's lucrative Summer season. Oops!

We asked...

Do you play music through your home cinema system?

- Yes! All of the time
- Occasionally
- Very rarely
- Never! It's movies only!



Results from www.homecinemachoice.com
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Dancing with the stars

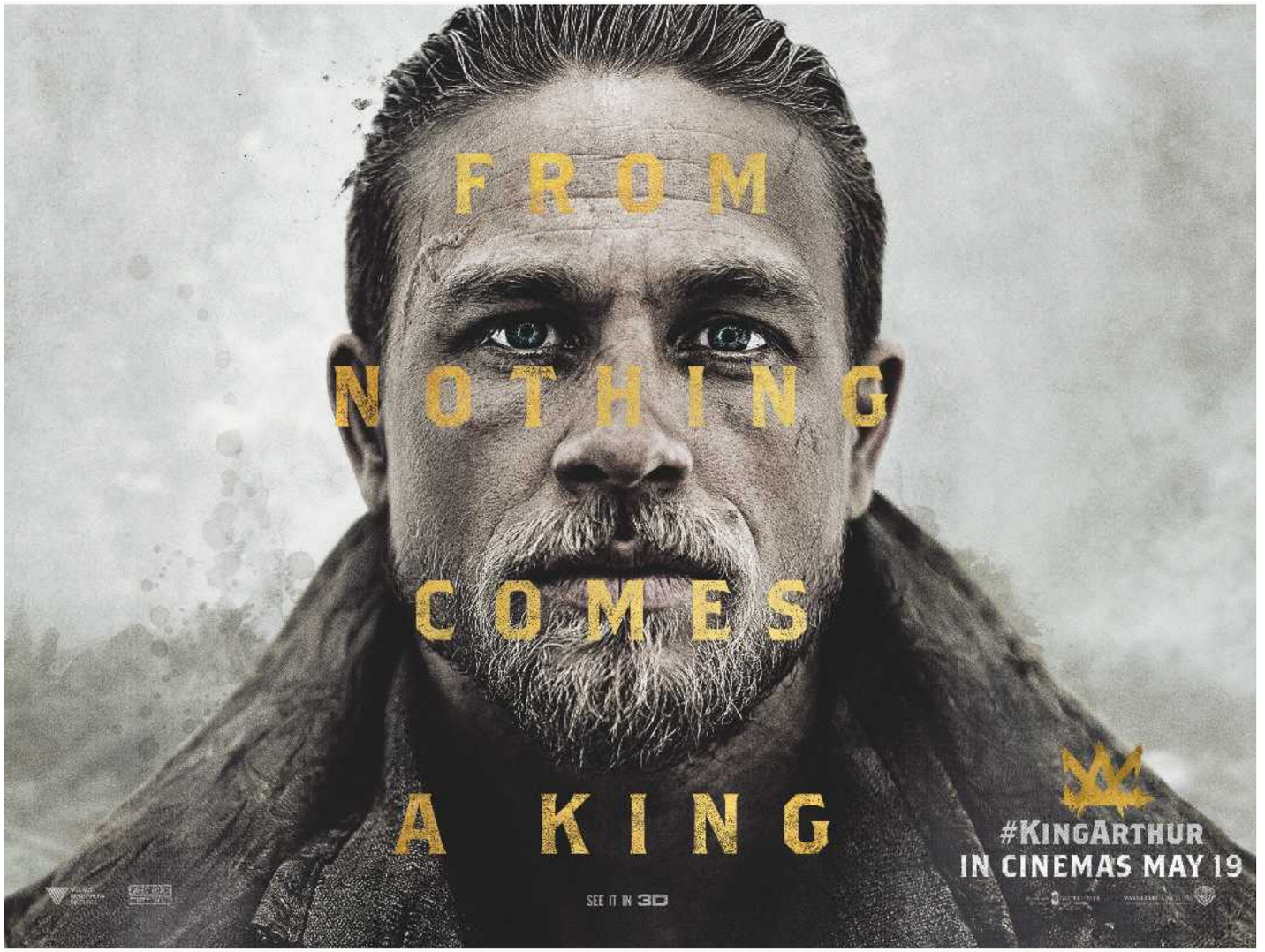
La La Land → Lionsgate UK → DVD/Blu-ray/Ultra HD Blu-ray

Here's one piece of news worth making a song and dance about: *La La Land* is swinging onto DVD, BD and UHD Blu-ray from May 15. The award-winning musical, starring Emma Stone and Ryan Gosling, will be accompanied by a Dolby Atmos soundmix on both its Full HD and 4K platters, while bonus bits are set to include a chat-track by writer/director Damien Chazelle and composer Justin Huwitz, plus 10 behind-the-scenes featurettes, demo versions of the film's songs and a gallery of poster art.









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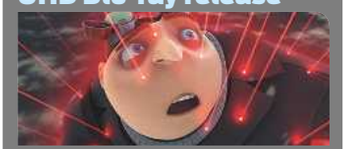
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Face to Face

Topics of discussion on the *HCC* Facebook page

On Despicable Me getting a Dolby Vision UHD Blu-ray release



That's wasted on that film!
Steve Old

I can't keep up anymore. I am sticking with standard Blu-ray for the foreseeable future!
Fondriest Steve

With the lossy DTS and DTS:X on the *Fast...* movies and the PQ on *Bourne* they can keep it.
Mike Wadkins

DTS:X – bring it on, can't wait. Pre-ordered!
Angela Graham

What you're watching on your home cinema...

Fantastic Beasts... but can't decide on 3D Blu-ray or Ultra HD Blu-ray for that one...
Amar Dhillon



I'm revisiting *Ghost In The Shell* and *Ghost In The Shell: Innocence* before nervously watching the live-action iteration. I'm also going for the ultimate joy fest of *Nocturnal Animals*, *Manchester By The Sea* and *La La* – sorry – *Moonlight*.
Ian Cooper

Fantastic Beasts... in 4K and HDR.
Frank Burton

Everyone loves pirates, so I'll be watching Season 3 of *Black Sails*, plus some classic Gene Hackman in the shape of *The Conversation*.
Robert Corrigan



The Equaliser (Washington not Woodward).
Matt Greaves

Hacksaw Ridge and *Sully*.
Kevin Cardle.

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Back of the 'net

Trailers, technology and more to check out on the web



'Quiet, you sassy robot...'

Okay, this is basically an extended advert for *Star Wars* LEGO (it actually *is* an advert for *Star Wars* LEGO), but there's something joyous about this stop-motion LEGO-assisted rapid-fire retelling of *Rogue One*, with fights taking place on desks and AT-ATs falling off bunk beds.
youtu.be/R-MvjCzZwPg



A bright idea!

Another time-lapse video from the team at CEDIA-approved installers UK Home Cinemas, this time capturing the installation of a drop-down projector screen, in-ceiling speakers and fibre optic lighting scheme to create a neat-looking movie den. Could be the inspiration you need to get busy with the MDF...
youtu.be/tr8WAB5ihWQ



King of horror?

If you're scared of clowns, don't even bother visiting the link below – it'll take you to a first look at Warner's adaptation of Stephen King's classic chiller *It*, due out this Autumn. If, however, you thought the previous screen version was good, but not creepy enough, you might have reason to smile.
youtu.be/FnCdOQsX5kc



Monkey magic!

War for the Planet of the Apes, the third film in Fox's rebooted franchise, lands in cinemas in July, and this trailer sets it out as an action-packed blockbuster that lives up to the title, with Woody Harrelson along for the ride as a (human) army chief. Altogether now: 'Apes! Together! Strong!'
youtu.be/JDcAlo8i2y8



More monkey magic!

The success of *Jaws* spawned an entire genre of killer monster flicks. Quick out of the gate was low-budget caper *A*P*E*, released in 1976 to, erm, no critical acclaim whatsoever. That hasn't stopped Kino Lorber releasing it on 3D Blu-ray in the US. Thinking of importing? Take a shufti at the trailer first...
youtu.be/943pcaqVQos



Can you hear what I hear?

Monitor Audio's IV140 speakers are built into a stud wall – you then skim with plaster, resulting in invisible sonics (remembering, vitally, to have wired in the speaker first). Sounds like something you might fancy in your listening room? Check out the company's short introductory vid.
youtu.be/IwSNcMNQlCo

The search is on!

Sky Q → www.sky.com



Sky is finally rolling out voice search functionality to its Sky Q hardware. Use the touchpad remote to call up shows, view channel lineups or track down content featuring your favourite actors. All of which is useful (and surprisingly accurate) but the most fun comes from hidden Easter Eggs that pull up movies when you suggest an iconic quote. 'We're gonna need a bigger boat' has you swimming with *Jaws*, while 'I'll be back' takes you straight to *The Terminator*. Happy hunting...

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HIGH-END HERO



PROCESS AND SERVE

For Arcam fans, the company is up there with Church's shoes or Aston Martin, genuinely English with a solid reputation. And whereas it may once have been seen as a little staid, these days it's rocking a lineup of AV hardware that will get any cinephile's juices flowing.

Last year I looked at Arcam's AVR850, which – priced at around £4,000 – was a lot more expensive than the average seven-channel AV receiver. But it seriously punched above its weight, combining Arcam's Class G power amps with premium Dirac Live EQ. Now getting into the ring is the company's new AV860. >



Auditioning Arcam's AV860 has given **Jon Thompson** an excuse to give his collection of XLR cables a spring clean

HOME CINEMA Choice
REFERENCE STATUS

This is a processor only. You will need power amplifiers to accompany it. With support for DTS:X and Dolby Atmos at 7.1.4, again aided by Dirac Live EQ, plus 4K/HDR passthrough over HDMI, it can be considered cutting-edge. The pre-amp/processor market is slightly crowded, with models from Marantz and Yamaha at the (relatively) affordable end and pricier options from Datasat and Trinnov. The AV860 appears well equipped to enter the fray. (My reference is the professional-grade Dolby CP850. I have heard of a few high-end home cinemas putting that unit in, even though because it's Dolby it does not support DTS...).

Out of the box and viewed from the front, it could pass as the AVR850, as it looks identical apart from a little badge in the lower-left corner that whispers the model number. It's not until you look around the back do you see the difference – a dozen XLR sockets for audio output. XLRs have become fashionable on home cinema gear as they give the impression that it's a professional-level product. Yet like its competitors, the

> 'Dolby Atmos and DTS:X, Dirac Live EQ, 4K and HDR passthrough – this can be thought of as cutting-edge'

internal architecture of the AV860 is unbalanced, so these sockets are converting unbalanced to balanced – some of the truly great advantages of XLR are lost. The output level is also consumer standard, not the higher output of professional gear. This is not a problem, just an observation, as all other consumer AV processors have this issue.

Also on the back are the usual connection suspects. Nothing is missing here, beyond an AES/EBU input but that has no place in home cinema as HDMI is king. Of the latter, there are seven inputs and three outputs – two for your main zone (for a TV and projector) and one for Zone 2. Then there are four 12V triggers (two for each zone), RS232, a 6V output via minijack, coaxial and optical digital audio inputs, a USB socket, and a forest of stereo analogue ins. A pair of XLR inputs, for high-quality two-channel devices, might have been nice.

The unit offers Ethernet but no Wi-Fi. Personally, I see the logic in this as Wi-Fi in a premium audio product, regardless of how well it's shielded, will impact audio fidelity.

A DAB/FM tuner is built-in. After complaining about wildly different DAB levels when listening on the AVR850, Arcam has added a DAB level trim control which proves very useful if, like me, you tend to roam the dial a lot.

Adding XLR to the party

The AV860 is essentially the AVR850 minus the internal power amplifiers, but with the addition of a high-quality XLR analogue output. This is reflected in the price; it's £500 cheaper as it doesn't have seven channels of grunt under the hood. Yet it's a better avenue for those with serious home cinema ambitions. One issue with the AVR850 was that for Atmos above 5.1.2, you had to employ additional power amps anyway. Nor was its 7 x 100W into 8 Ohm power claim necessarily the sort to be welcomed in super-large cinema rooms.

Video trickery is absent. The AV860 works as a switcher but nothing else. Again, this isn't an issue. More of a niggle is the user interface design. The setup menus are essentially identical to the AVR850's, which means they still look old-fashioned. But after initial setup you'll probably not spend much time with them.

Network connectivity enables the Arcam to be integrated with whole-house control systems, or with Arcam's iOS MusicLife UPnP/control app, which is easy to

1. If possible, use the Arcam's XLR multichannel outputs

2. The remote offers an eight-second backlight





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3

use and responsive. This can connect to UPnP audio servers to play your collection of FLAC, MP3, WAV, WMA and AAC tunes. There's DSD support, nor Apple AirPlay, which will put off some buyers. It is Spotify Connect enabled, however.

Moving around Lah'mu

I kicked off my listening with the 7.1 DTS-HD Master Audio mix on the new *Rogue One* Blu-ray (see p96). As Orson Krennic's ship approaches and lands on the surface of Lah'mu, the Arcam presents a wonderful appreciation of sound steerage, panning the audio effortlessly. The mix sounds clear, loud and very crisp with a rich, deep bass.

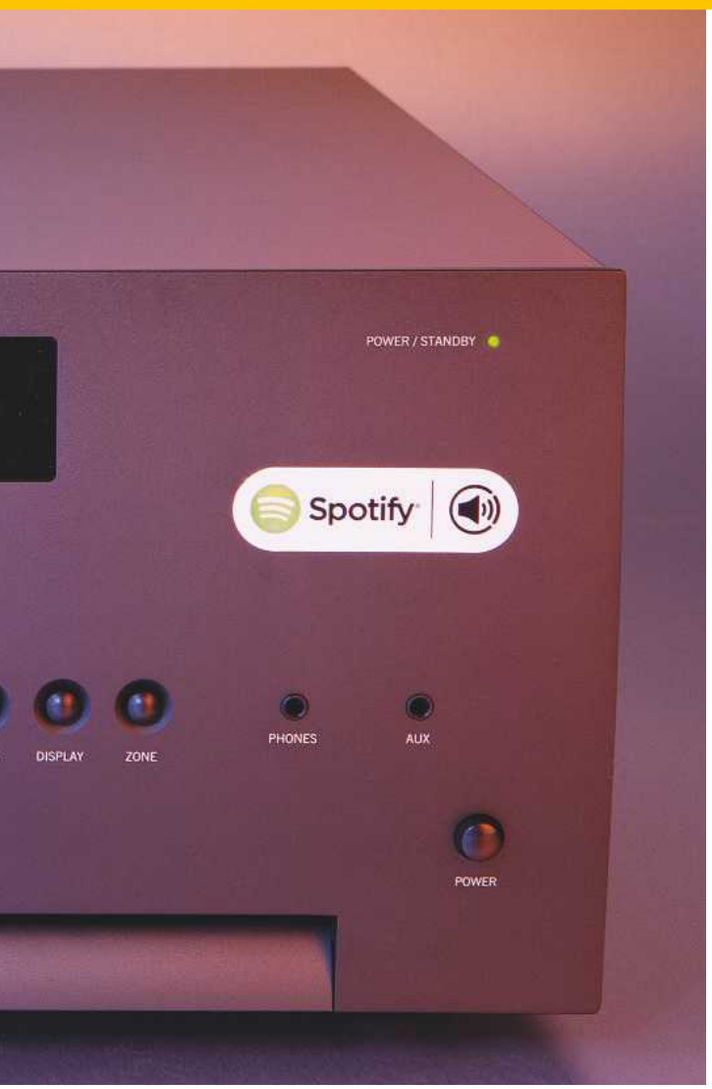
I did a side-by-side comparison of the AVR850 via its phono outputs and the AV860 via XLR (using Constellation Audio power amps and Wilson Audio speakers). What was immediately apparent was how superior the AV860 was. It had a depth and clarity that surpassed the receiver. The experience was similar switching to the AV860's phono outputs. You really will want to partner this with XLR hardware.

Moving on to Dolby Atmos material meant I decided to switch player (to a 4K model), which thankfully didn't cause the Arcam to stumble over any HDCP 2.2 handshake issues. Mel Gibson's WW2 drama *Hacksaw Ridge* (Ultra HD Blu-ray) won an Oscar for its soundmixing, overseen by legend Kevin O'Connell who – despite being nominated 20 times – had never won before. It's a thrilling Atmos track. I spun through to the assault on the cliffs, which begins with Navy artillery fire, building slowly to the engagement where the sound kicks like a deranged mule. Some Atmos tracks seem shy of using the extra channels – this film isn't. Via the AV860, it brought up memories of *Saving Private Ryan*. I felt like I was trapped in the centre of the action. Compared to any other processor I've heard (expect the aforementioned Dolby 850), this sounded clearly bigger and more powerfully presented. The weight and positioning of effects is exemplary, making the onscreen action seem almost too close for comfort.

> 'Dirac Live isn't exactly a plug-n-play EQ system, meaning this processor isn't for the faint-hearted'

This was all with the AV860 running the Dirac Live EQ, of which I am a huge fan. It's the *crème de la crème* of consumer EQ suites, although not designed for the casual, time-poor user. I covered it before with the AVR850, but I'll briefly explain again how it works.

First, it conducts room analysis, listening to each speaker you have, logging its characteristics (phase, time alignment, frequency response) and presenting them in a graph. You can take multiple measurements from different positions – the more points you analyse, the better eventual correction you will get. Don't do just one to save time...



All this data is then analysed and a correction curve arrived at to allow the AV860 to fine-tune your speaker's performance, based upon the unique characteristics of your listening environment. Bespoke target curves can be set; I go for Dolby's X Curve. Tuning includes subwoofers, too, which is particularly useful as these are often the hardest things to get sounding good.

Anyway, for a change of pace from sci-fi and warfare, I queued up *La La Land* (Ultra HD Blu-ray). I wasn't particularly looking forward to it as I hated the film when I first saw it, but this disc has an Atmos mix, too. The performance of the AV860 with the opening dance number actually made me want to watch it all. Scary. It had rhythm and timing in abundance, and also showed up how bad the lip syncing is in the freeway sequence.

That same sense of timing and precision, of unimpeded resolution, makes it a good choice for hi-fi fans. A recording of Tchaikovsky's *Piano Concerto No.1* by the London Symphony Orchestra (SHM-SACD), fit the Arcam's delivery like a silk glove.

Flying the flag for DTS:X

While the AVR850 gained DTS:X decoding support via a firmware update, it's present on the AV860 out of the box. Next off the pile, then, was the Ultra HD Blu-ray of *Patriots Day* – you can't knock a Mark Wahlberg/director Peter Berg combo. As with *Hacksaw Ridge*, it's not a happy story, and sound plays a major part in the drama. There's realism to the spatial accuracy of sound effects, with the 3D audio yet again putting you front and centre of the action, be it the layered crowd scenes or quieter, less busy moments. It was never too loud or too quiet; the AV860 with Dirac was giving a masterful, assured performance worthy of any high-end screening room.

And that's the thing. You would never run the AV860 with Dirac disabled. Do that, and your speakers, subwoofer(s) and room acoustics are being left to their own devices, and the sound will shrink down and become muddied as a result. But Dirac isn't exactly a plug-n-play EQ system, meaning this Arcam isn't for the faint-hearted. It's designed to be the sonic heart of a high-end setup, and could take a day if not more to get it running correctly. Like any high-end instrument, it's only as good as the fine-tuning.

There are niggles here, as there were with the AVR850. The user interface is uninspiring, the lack of AirPlay and DSD surprising, and the headphone output remains 3.5mm. But if you want a 3D sound preamp/processor and you want the best with available software (the absence of Auro-3D isn't really a concern), this is it.

The other problem is that you need partnering hardware, and you'll soon run up a bill. Want to run 11 channels? Then you need 11 channels of juice. Stay in house with Arcam's Class G power amp range (including the £1,600 P429 four-channel model chiefly designed to add that extra quartet of speakers to a seven-channel AVR) and your bank manager will start noticing. And then there's the speakers to consider.

But that's what the AV860 is all about. I have no problem in recommending this as the cornerstone of a system above the £20,000 mark. In fact, it wouldn't be out of place in a setup costing ten times as much ■

SPECIFICATIONS

DOLBY ATMOS: Yes ***DTS:X:*** Yes ***AURO-3D:*** No ***THX:*** No ***POWER OUTPUT:*** N/A (processor only) ***HDMI:*** 7 x inputs (6 x HDCP 2.2/HDMI 2.0a); 3 x outputs (all HDCP 2.2/HDMI 2.0a) ***AV INPUTS:*** 2 x digital optical audio; 4 x digital coaxial audio; 2 x phono stereo analogue) ***ANALOGUE MULTICHANNEL INPUT:*** No ***MULTICHANNEL OUTPUT:*** Yes. Phono or XLR output (7.1.4) ***MULTIROOM:*** Yes. Zone 2 A/V ***VIDEO UPSCALING:*** No ***DIMENSIONS:*** 433(w) x 171(h) x 425(d)mm ***WEIGHT:*** 10.35kg

FEATURES: Dual subwoofer outputs; Ethernet; 2 x 12V trigger; USB; RS232; 6V (rSeries) terminal; 2 x IR inputs; FM/DAB tuner; Spotify Connect; works with iOS MusicLife UPnP/control app; Dirac Live for Arcam room EQ (laptop/PC required); Cirrus CS42528 audiophile DAC; Control4 and Crestron automation support; FLAC, AAC, WAV, WMA, MP3 playback

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ARCAM UDP-411: Maintain an Arcam kit rack with the brand's audiophile Blu-ray (but not UHD Blu-ray) player/network media player/Super Audio CD spinner. Originally launched at £1,200, you can now pick one up for around £800.

3. Don't try to play spot the difference with this and Arcam's AVR850

HCC VERDICT ★★★★★

ARCAM AV860

→ £4,000 → www.arcam.co.uk

WE SAY: A reference-level preamp/processor that sounds sublime, but you need to invest time (or maybe pay someone else) to get it setup correctly.

ALL HAIL THE

DECONSTR





UCTED TELEVISION

Steve May journeys to San Francisco to 'hang out' with LG's innovative W7 OLED 4K TV

IT'S BEEN A trope of science fiction for decades, but now the wafer-thin hang-on-the-wall TV is a reality, courtesy of OLED innovator LG.

The W7 has been dubbed The Wallpaper TV for good reason. To see it up close, to bend it and then stick it to a wall using magnets (not wallpaper paste, that would be disastrous) seems mind-blowingly futuristic. But it's here now, and for £8,000 can be yours. But should you buy it?

It's perhaps best thought of as television deconstructed. The W7 comprises a 65in OLED panel tethered by a flat cable to a tuner box and sound system combi. It's audacious and beautiful, technically intriguing and undoubtedly groundbreaking. It's also very difficult to review, not least because the screen needs to be fixed to a wall plate. Without this anchor, it lacks the rigidity to stand upright. Consequently, rather than ship a W7 to *HCC* Towers in the time-honoured fashion, LG shipped me to San Francisco, where I could both assess its performance pre-installed and banter with bigwigs from LG and Dolby.

2017 is turning into a watershed year for OLED, and a bumper payday for panel-baker LG Display. Most readers will know that Sony, Panasonic, Philips and Loewe are backing OLED this year. But Vestel, Konka, Changhong, Toshiba, Skyworth, Grundig and Metz are also prepping sets. In fact, so many manufacturers have signed up that there's now a squeeze on OLED screen supply.

The technology was first developed in 1987, but really didn't begin to come into its own until 2013. Since then picture improvements have been arriving thick and fast.

The W7 is an extraordinary showcase for the rapid-rising technology. So thin that it bends (but not by much) and light enough to be held up by magnetism, the W7 effectively redefines what it means to be a telly, while the accompanying soundbar/tuner/silicon box also features Dolby Atmos support. But there's both more and less to this premium display than meets the eye... or ear. Time to take a closer look.

'Daddy's flown across the ocean...'

As stated, the W7 is exclusively built for wall-mounting. There is no other display option – those with AV stands can look away now. However, the soundbar (LG sporadically insists it's not a soundbar but doesn't really offer a memorable alternative) is not. It's designed to sit on the same furniture (or a shelf) that would otherwise have supported the TV.

LG's wall plate is as wide as the set. Die-cut magnetic slots mean the screen can only attach to the mount one way.

The W7 panel tethers to the soundbar-thingy via a dedicated umbilical chord. This is wide, flat and somewhat short at 47cm. Luckily, bundled in the box is an extension lead, which is rather thicker, and extends reach to 160cm.

With no room for connections on the OLED TV panel, the soundbar takes care of all socketry. There are four HDMI inputs, all HDCP 2.2 compliant, plus three USBs (one a fast v.3.0 variant for USB recordings) and minijack AV. There's also an optical >

BACKGROUND IMAGE: SHUTTERSTOCK.COM/MAXGER



The TV and 'bar link together by a single power/signal cable

digital audio output (although when you think about it, that's surely pretty redundant), plus Ethernet and dual-band Wi-Fi. Tuners on the UK model will comprise twin Freesat and Freeview Play, although my 'Frisco special had no broadcast access.

Sources for evaluation at LG's Californian HQ comprised streaming services and UHD Blu-ray. And it didn't take long to deduce that the picture quality on the W7 is something else. With deep blacks, immaculate shadow detailing and vibrant colours, this is imagery that evokes genuine wonder.

While a unique product in LG's 2017 stable, the TV sports the usual features. This means the company's fresh-feeling WebOS operating system, and a typically wide variety of image presets. So for regular fare, choose from Cinema, Sports, Games, ISF Expert bright room, ISF Expert dark room and Vivid, and for HDR content, there's Standard, Cinema Home, Cinema, Games and Vivid variants.

When viewing HDR material, contrast, brightness, sharpness and colour remain adjustable. Gamma manipulation is locked off, however.

Of course, the majority of content you'll view won't be HDR at all. So naturally there's an option to fake it, using an HDR Effect mode. This is a clever cocktail of highlight detection, contrast enhancement and colour correction. Whether you employ it or not will be a matter of personal taste. It's certainly effective.

The Cinema Home mode only available with HDR is particularly interesting, as it's intended to maintain the creative intent of HDR content but with a higher APL (average picture level) than the regular Cinema mode, a sop to those who feel that HDR movies look – somewhat ironically – too dark. While LG suggests that the Cinema preset more closely reflects how a movie/TV show will have looked in a mastering suite, the APL is perhaps too dim in an averagely-lit room. Cinema Home has a higher APL while retaining dynamic range, giving images much more punch and snap. It also makes more visual sense.

For example, in *Mad Max: Fury Road* when a gagged Tom Hardy flees pursuers early in the first reel, light floods in through the bars in the roof of Immortan Joe's tunnel (around 4 min, 35 seconds). With the W7 in Cinema Home mode, the shafts of HDR light are clearly defined, almost torch-like. However, in regular Cinema mode, they dull considerably, almost as if it's overcast outside (and as we see, literally moments later, it's not at all). In terms of coherent storytelling, Cinema Home wins. The mode also elicits greater colour richness from the frame.

Of course, LG isn't alone in trying to reverse-engineer more 'user-friendly' HDR images from native sources – Sony's latest HDR projector line, for instance, sports a somewhat similar HDR Contrast mode.

One step Beyond

The W7 has no problem delivering the high-frequency detail in a 4K test pattern. Translated to UHD Blu-ray, this clarity is just gobsmacking. Streamed content, in Dolby Vision from US streaming service Vudu, is equally immense. When the Enterprise boldly goes in *Star Trek Beyond*, space is inky black, yet shadow detail and VFX nuance is considerable; during *The Secret Life of Pets*, the eye-candy CGI is dazzling. As an intro for Dolby's tech it's compelling, and the image is startlingly dynamic, even without the luminance range being cultivated

Mine is better than yours...

The colour war rages on

Behind the scenes, there's a bitter war of words going on between rival brands as to the prowess of competing OLED/QLED/LED LCD panel technologies. But should consumers be swayed by claims of superiority one way or another?

Any differences arise from how you measure, and what you prioritise, LG's boffins told *HCC*.

On the claims and counter claims around colour volume, competing metrics and even HDR formats, Timo Kunkel, researcher with Dolby's Imaging R&D team, agrees. And he argues that the time is right to embrace an entirely new universal measurement methodology to compute the number of distinguishable colours. This would mean an end to claims of DCI P3 percentage coverage, in favour of an MDC (Millions of Distinguishable Colours) numerical rating. Using this metric, 100 per cent of REC.709 has an MDC of 118, while DCI has 412.

Dolby, he says, has 'always taken a Human Vision Systems model', and, if you can't spot a difference, it's probably not important.

The W7 OLED attaches magnetically to LG's bundled wall plate



by rival high-end LED-lit models. According to LG, small highlights, such as a star field, can peak at 1,000 nits on its wall-hugging flagship, but a full peak-white screen is power limited to just 150 nits.

Dolby Vision (DV) playback is a weapon in the TV's arsenal that comes as no surprise – LG introduced support for the HDR format last year. There remains precious little content available in DV at the moment, of course, but given the traction Dolby Cinema has in Hollywood (the company's umbrella tech for theatrical releases in Dolby Vision and Dolby Atmos), you shouldn't bet against it getting a more meaningful foothold in the home. The first Dolby Vision UHD Blu-rays are arriving this Summer.

And according to Patrick Griffis, Dolby's CTO Vice President, Dolby Vision perfectly complements OLED. While in cinemas it's heralded as offering a million-to-one contrast performance, he describes 10,000 nits in the home as 'an aspirational goal' for DV. Currently cinema images offer better quality than home displays, he tells me, 'but the race is on.'

Back to the W7, and improvements over previous LG OLED displays to enhance clarity in dark scenes. New this year is a Neutral Black polariser designed to boost contrast and black level to the edge of the screen for daytime viewing. A new bit-depth enhancement algorithm improves low grey level; there's also a de-contour algorithm, to reduce noise. While I thought there was still some evident noise in the image (not grain), it's generally unobtrusive.

To get a sense of what the W7 looks like with HLG (Hybrid Log-Gamma) broadcasts, LG provided *Planet Earth II* test footage. As expected, it looked sublime. However, it was never exactly clear if LG was applying its own Active HDR post-processing to the footage. It transpires there's a method of disengaging Active HDR, but it's disguised in the set's Dynamic Contrast menus and will never be found by regular users. This bail out was a last-minute provision, I was told.

Welcome to Dolby Atmos lite

While the W7's image quality is an unqualified wow, the soundbar is a conundrum. Not only is it big and heavy, it doesn't perform as you might expect.

For example, those two top speakers, which rise when the set is powered up, aren't height speakers and are not Dolby enabled. Their job is actually to virtualise audio at screen height. As the soundbar doesn't have a dedicated centre speaker, this pair creates a phantom one. LG describes the configuration as 4.2.

The most surprising thing about the W7's audio system, which is branded Dolby Atmos capable, is that it isn't able to recognize Atmos when it's bitstreamed from a Blu-ray player. It can only determine Atmos data when delivered in a Dolby Digital Plus container. In the US this means it plays Dolby Atmos soundtracks when they're available on the Vudu streaming platform.

In the UK, we can expect it to work with Atmos from BT Sport's UHD football broadcasts. It's a fair assumption that Sky will also use Dolby Digital Plus for Dolby Atmos.



The bar's top-mounted drivers raise when the unit is powered up



The race is on between commercial cinemas and domestic AV, says Dolby's Patrick Griffis

It was clear at my briefing that even LG UK execs didn't know about the W7's Blu-ray intolerance. A search for an update via firmware is now on.

When the soundbar does acknowledge an Atmos stream, a little flag pops up in the corner. Once unpacked by the decoder in the 'bar, the Atmos bitstream is sent to a renderer, which juggles the mix to make the most of it with the speakers available.

However, the resulting soundfield doesn't exhibit any of the benefits traditionally associated with Atmos. *Star Trek Beyond* and *The Secret Life of Pets* both offered extremely wide stereo, and some forward projection, but no real height or surround inflection. More crucially, there is no deep bass from the unit at all, and with no dedicated sub output there's no opportunity to add a woofer for LFE.

So is the implementation of Dolby Atmos on the W7 actually one dilution too far for the self-proclaimed 3D audio codec? Brett Crockett, Vice President, Sound Technology at Dolby Laboratories, doesn't believe so: 'We're transmitting a recipe, not the baked cake.'

LG W7 OLED verdict

So what to make of LG's hanging wonder? When it comes to picture quality, the set appears – from this initial viewing – to knock it out of the park. With sumptuous colour, beautiful near blacks and some great HDR peak highlights, it's an immersive watch and bodes well for the rest of LG's more conventional OLED range.

The design is rather more eclectic. While the ability to mount the screen flush to a wall is technically brilliant, the soundbar is a mixed bag. The fact that it's unable to deliver Atmos from Blu-ray will immediately frustrate many, and its speaker configuration isn't what you might first assume it to be. Sure, it offers better audio than the average flatscreen, but that's about as far as it goes. And using the W7 in a home cinema with multichannel audio from an AV receiver becomes a faff, as the 'bar can't be jettisoned.

That said, there's no denying the allure and audacity of this high-end display. Perhaps we're only at the start of the OLED screen revolution ■



LOVING THAT LASER

ONE OF THE tell-tale signs you're a 'home cinema hero' – according to my colleague Steve May in a recent issue of *HCC* – is that you 'still have a LaserDisc player, somewhere...' And, indeed, to AV geeks of a certain vintage, the mere word conjures up cherished memories of that unmistakable whooshing sound as the big and beautiful medium – think CD, enlarged to LP size – was brought up to speed within the sizeable slab of a player.

LaserDisc owners knew they were in for a movie-watching treat, with CD-quality stereo sound accompanied by visuals that rivalled broadcast quality. In the era of standard-def analogue telly and 4:3 CRT TVs, you couldn't get better at home. LaserDisc devotees also took for granted features that the VHS-buying masses would only be in a position to appreciate come the DVD revolution – such as chaptered access to sections, frame-by-frame analysis, freedom from wear, 5.1 surround sound and bonus material like director's commentaries and featurettes. It was simply light years ahead of its time.



Even the error messages were cool: the LD way of telling you to flip your disc

The LaserDisc story doesn't even begin with the name LaserDisc, though. Instead, we have to

LaserDisc was the first premium home cinema format. Martin Pipe takes a trip down memory lane, 12in platters in hand



The joy of LaserDisc – big movies on big shiny platters

travel back to 1972, a time when disco music was ruling the airwaves...

Stayin' alive

The Discovision system – as it was originally known – was developed by Philips and record company MCA from patents filed by US inventors Dr. David Paul Gregg and James T. Russell. First demo'd as a prototype in 1972, Discovision was eventually marketed in a handful of states over the December of 1977, and received its full US launch the following year, with players badged 'Magnavox' (Philips' consumer brand name on that side of the Atlantic). And it heralded an AV revolution that would last until the end of the 1990s.

Discovision's 12in disc was scanned by a 'non-contact' (hence no wear) optical system built around a helium-neon laser tube. This mechanism could yield up to an hour of analogue video at a standard hard to distinguish from off-air TV. Furthermore, you got the draw of stereo sound, at a time when TVs were strictly mono.

Mass-producing Discovision titles was cheap, certainly in comparison to the videotapes that were coming to market around the same period, which had to be duplicated in real time. Like LPs, and unlike CDs, the discs could take advantage of double-sided operation. A complete movie spanned both sides, meaning you had to flip it over halfway through.

It'll come as no surprise to those of us battered by format wars that Discovision wasn't the only videodisc to go on general sale. There was also CED (Capacitance Electronic Disc) – aka Selectavision. CEDs were tracked by a lightweight stylus rather than a laser, and so would eventually wear out. Stereo sound was again supported, but image quality was mediocre. CED was a market failure, nearly bringing the format's main backer (RCA) to its knees.

But back to Discovision. Two different varieties were offered – differentiated not by content, but according to how information was packed onto the disc. Both were issued throughout the format's lifetime. The first, sold as CLV (Constant Linear Velocity) or long-play, offered the longest running-time. It offered little in the way of trick playback; you didn't even get a basic VCR-type still-frame feature. You could, though, skip through while viewing pictures. The second type – known as CAV (Constant Angular Velocity) or active-play – sacrificed running time for trick-playback potential; each frame was addressable (a frame counter display was of particular value to film buffs).

CLVs were employed for an average movie, as it could span the two sides of a single disc. CAVs were more common for documentary titles, and multi-disc special editions of movies. At least one release – Paramount's 1953 version of H. G. Wells' *War of the Worlds*, released in 1997 – used CLV on side 1, and CAV for the spectacular climax on side 2.

It was more usual for a CAV title to span three or four sides. Sometimes, the fourth side wasn't required by the movie (or extra features). Play it by accident, and you might encounter a cartoon turtle on its back – with a message informing you that material was recorded on the other side. Quirky.

1978's Magnavision Model 8000 player set a basic precedent for the hardware that was to follow. It could be connected to both your TV (typically via its aerial socket) but also a hi-fi system, unleashing the potential of those stereo soundtracks.

Discovision's AV performance may have trounced that of a VCR but no recording facility was offered. To this end, the format was backed up by a large variety of software. You could choose from documentaries, music discs and – most >

CD Video...

Philips' own fly in the LaserDisc ointment...

Digital was the 'buzzword' of the 1980s, and it encouraged Philips to have another stab at the LaserDisc format in 1987, with a development called CD Video, or CDV. These 5in (CD-sized) platters combined a short (less than five-minute duration) music video with digital sound, together with up to 20 minutes of additional audio-only material. The latter could be accessed by a regular CD player, the former in your LaserDisc deck.

Both Philips and Pioneer sold CD Video players with 5in trays, which looked just like normal CD players. This type of machine was, of course, incompatible with 12in discs – plus an intermediate 8in diameter variant that could run for 20 minutes. Other machines would accommodate all sizes.

Eventually CD Video, like so many bright Philips ideas, came to nought. And it didn't help customer confusion that when Philips tried to push its MPEG-1 precursor to DVD in 1993, it used the moniker Video CD...



Pioneer's CLD-2950 supported 12in, 8in, 5in and 3in disc playback

importantly – movies, the first released being Spielberg's 1975 smash *Jaws*. Studios outing titles on 12in platters included Warner Bros, Universal, Paramount and Disney. Ultimately, performance was limited by the source material. The format could be (and, throughout its lifetime, usually was) excellent, but bad discs (some spoilt by faint but distinct colour patterning in the background, others with overall visuals not much better than VHS) escaped through quality control.

The inability to record helped to ensure that not even a publicity campaign featuring *Star Trek* actor Leonard Nimoy could cement Discovision as a mass-market proposition. But it did achieve success among quality-obsessive users, and found uses in all sorts of arenas, from businesses and museum exhibitions, to Lucasfilm's groundbreaking non-linear movie editing system (EditDroid), video games and the BBC's interactive Domesday Project.

You can call me PAL

After numerous deadlines and false starts, pictures from a silver disc finally saw the light of day in the UK in 1982. You had to buy special PAL-format software, of course, as imported NTSC discs wouldn't play on the Philips-branded PAL machines and which, in any case, would have been attached to PAL-only TVs. PAL discs spun at 1800rpm – 300rpm faster than their NTSC brethren, giving a different pitch to that iconic whoosh...

This may be why Philips initially used a different name – Video Long Play (VLP), rather than Discovision.

Eventually, though, the term Laservision was coined. Whatever the moniker, AV enthusiasts praised the format's lofty standards of picture and sound.

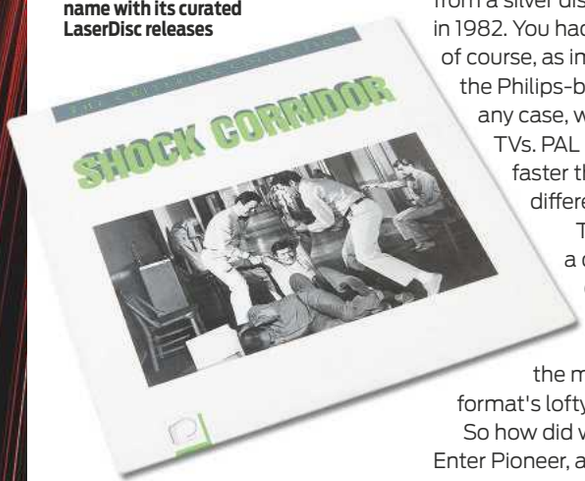
So how did we get from Laservision to LaserDisc? Enter Pioneer, a brand that did more to cement the format as a home cinema staple than any other. The Japanese corp launched its first unit in 1984, with a cheaper semiconductor laser of the sort that all CD players have, and used LaserDisc as branding. Pioneer also set up software companies (Pioneer LDCE in Europe) to distribute material in the format, and popularised LaserDisc for karaoke.

But its real impact was felt in hardware. At various points in AV history Pioneer marketed high-performance 'component' video systems with largescreen displays, introduced its £25,000 Pioneer VDR-V1000 LaserDisc recorder for professional use, adapted LaserDisc to the Japanese MUSE hi-def format and sold clever machines capable of playing both sides of a disc without having to spit it out first. Players like the UK-model CLD-2950 had a laser that could perform a literal internal U-turn.

Pioneer was also instrumental in applying a CD-quality (16-bit, 44.1kHz) LPCM soundtrack to NTSC platters in 1985 – the associated player would also spin CDs, often with a dedicated smaller disc tray that extended from the main LaserDisc one. All of the multi-standard machines sold by Pioneer in Europe were of this type by the late 1980s.

Around the same time, the company started selling players in Europe that were capable of handling not only official PAL titles, but also NTSC releases, imported from the US and Japan. These dual-format decks, with circuitry to transcode NTSC into a 'pseudo-PAL' signal that most recent TVs could handle, sold like hot cakes as UK cinephiles tapped into the much wider range of discs abroad. Even as far back as 1984, there were nearly a thousand titles in the US, from big-name movies (*Tootsie*, *Raiders of the Lost Ark*, *Psycho*, *Poltergeist*, *Apocalypse Now*, *Gandhi*...) to music releases (*Michael Jackson's Thriller*, *Fleetwood Mac In Concert*, *Queen's Greatest Flix*...). An NTSC-compatible PAL player could play all these – and the thousands

Criterion Collection made its name with its curated LaserDisc releases



of titles released over the intervening five years – plus 'legit' material too.

Another bonus draw was that fans often got to see films ahead of their UK video release date. The expense associated with imported discs was a price worth paying. Step forward to the present day and Ultra HD Blu-ray enthusiasts will tell you much the same thing. Minority niches were well served too; fans of anime were in seventh heaven.

Settling in for the short haul

They may have taken disc sales away from Pioneer's own LDCE arm, but players capable of handling both NTSC and PAL helped to establish LaserDisc as a stalwart of the fledging home cinema industry in the UK. Film fans were its biggest market, and we embraced it eagerly.

The format's technical superiority to VHS wasn't its only appeal, either. LaserDisc began the idea of the deluxe home video release, with specialist labels – Criterion Collection in particular – selling lavish releases of iconic movies using the best-possible transfers, and loaded with special features. Often, these expensive editions spanned multiple CAV discs, and featured sumptuous artwork and info-packed booklets. They took the art of collectability to heights traditionally associated with vinyl. However, some of them were produced exclusively for the Japanese or US markets. No wonder NTSC-compatible players were so popular.

By the mid-1990s, while DVD was still being prepped, LaserDisc was the AV king. Some titles were being certified by Lucasfilm's THX programme, ensuring high standards maintained during mastering and transfer. Pioneer LDCE was doing a fine job distributing mainstream movies and concert extravaganzas, usually in affordable single-disc CLV editions. You could buy LaserDiscs on the high street, or you could import from around the world. And it had undergone a key, AV-centric transformation.

As mentioned, the format was stereo-capable from the outset. But in the 1990s LaserDisc was tweaked to support the AC3 system – better known as Dolby Digital – that made its theatrical debut with *Batman Returns* in 1992. In 1995, Harrison Ford thriller *Clear and Present Danger* became the first LaserDisc release to pack a discrete multichannel soundmix. Basically, one of the NTSC LaserDisc's FM audio channels was sacrificed for AC3; the other remained, and could be used for a mono commentary or soundtrack in a different language. The PCM soundtrack (usually Dolby Stereo matrix-encoded, the precursor to authentic surround sound) was retained for backwards compatibility.

To explore this brave new sonic world you needed an AC3 decoder, an NTSC-compatible LaserDisc player able to output this information (modifying an existing machine was an option) and a device that interfaced the two. LaserDisc players started sporting the necessary AC3-RF outputs. This was fed to a unit known as an AC3 demodulator, which retrieved the AC3 bitstream and presented it to the decoder in a form that could be understood. Many AC3 decoders and high-end AV receivers incorporated the demodulator. The difference it made was tremendous – discrete 5.1 knocked matrix-surround into a cocked hat.

AC3 was a huge success, but another digital multichannel format was waiting in the wings. DTS offered a higher bitrate (1.235Mbps) than AC3's 384kbps, meaning compression could be less severe. Furthermore, you didn't have to worry about external demodulators – DTS tracks could be sent via a player's existing digital audio output. The first DTS LaserDisc was *Jurassic Park*. Once again, the only available software was NTSC, as PAL discs had no alternative soundtrack to placate disc-buyers without DTS facilities.



LaserDisc continued to release titles right through the 1990s

The beginning of the end

Spine-tingling sound, an extensive library and collectible releases – LaserDisc had it all. Well, almost. As it reached its technical peak, its days became numbered, with the new all-digital wonder-format (how we thought of DVD back then) looming on the horizon.

DVD, launched in 1998, offered support for one or more stereo or multichannel audio soundtracks as standard, and stored video in digital-component form rather than old-tech analogue composite.

Every DVD gave you the noiseless trick-play picture quality (but not the direct frame access) of CAV LaserDisc, plus support for anamorphic widescreen as an alternative to wasteful letterbox.

MPEG-2 compression was used to squeeze data rates down to practical levels, and although initial releases looked mediocre with noticeable artefacting, encoding techniques improved. And DVDs were CD-sized, the kind of bonus feature that those with hulking 12in collections appreciated.

Format pioneer Pioneer kept the flag flying with clever players (like 1998's DVL-909) that could spin DVDs as well as LaserDiscs and CDs. But they weren't ideal. The component or RGB Scart output was exclusively for DVD, while the lack of AC3 demodulators meant that you could pipe Dolby Digital soundtracks from DVD but not LaserDisc to your AV gear. And 'combi' players didn't make good use of the digital electronics that had to be incorporated for DVD playback to offer features like video noise reduction and trick playback from CLV titles.

Despite such limitations, these expensive machines sold well. AV-Holics now had something that could handle not only their existing collection but fancy new DVDs too. But the nails were being >

laid out around the coffin and LaserDisc's last software release came surprisingly quickly in 2001. By the end of that decade, the format was all but forgotten, with collections and players quietly disposed of by many film fans.

Time to let it be?

Except the story isn't so simple. Even today, some are loath to divest themselves of their big discs – and for good reason. A considerable amount of material once sold on VHS or LaserDisc has yet to make it onto DVD, Blu-ray or download. A used LaserDisc may therefore be the best-quality option. Music is a case in point – dozens of concert performances remain in the analogue domain.

Consider, for example, the 1970 Beatles doc *Let It Be* – shot at a time when the band was close to collapse. It was released on home video (VHS and LaserDisc) in the early 1980s, but has yet to see a digital release, possibly because it's not how the surviving band members wish their collaboration to be remembered. The only way you can watch *Let It Be* at its current domestic best is to spend a fortune tracking down a copy of the NTSC-format LaserDisc.

And sometimes LaserDiscs remain superior, in one or more respects, to their DVD or Blu-ray counterparts. They may contain scenes or extras (often chat tracks) that were cut from subsequent releases; retain the theatrical release's original music; be featured in a more appropriate aspect ratio; have their basis on a better transfer; or boast superior (or true to the original release) audio.

I know what you are thinking. Now is not the time to start hunting around for retro hardware and discs. After all, you have 4K Blu-rays to buy. Yet if you are curious about a format you never experienced, or anguished that you had a collection and threw it all away, all is not lost.

Players and discs are still fairly abundant today, and prices vary widely. Rarer titles can change hands for significant sums of money, but most can be had for a fiver or less. And while some equipment – like MUSE players and LaserActive gaming consoles – is uncommon and can fetch high prices, regular domestic players are another story. Not so long ago, they sold second-hand for next to nothing; in 2017 working specimens typically go for £50 upwards, with higher-end Pioneer players (especially 'U-turners' and DVD combos) fetching over £100.



The hardware itself is remarkably resilient. My CLD-2950 player is over twenty years old yet works perfectly. But some words of caution, even if you find a working player. Your display needs to have analogue AV inputs (composite or S-Video), connectivity that's disappearing from modern gear. And while the movies may have looked great on a 25in CRT, don't expect miracles after those standard-def pictures have been upscaled to a 60in 4K TV...

And another thing. Even given their non-contact nature, the discs aren't completely reliable. Remember the 'disc rot' that affected certain CDs a good few years back? Some LaserDiscs, especially titles from the early to mid-1980s, are plagued, too. Owing to manufacturing deficiencies, the reflective aluminium layer slowly oxidises through atmospheric contamination, causing readability issues. The results range from dropouts and skipping to a complete refusal to play. Laser rot is not always visible on the disc surface, but light brown spots or patches are definite signs.

Actually, I'm aware I may be putting you off. Don't be. There's a lot to love about LaserDisc ■



Top: There's still a strong second-hand market for hardware and software... Above: ...but beware of discs suffering from 'laser rot'

From 007 to Looney Tunes – rare LaserDiscs to track down

A quartet of titles that – for one reason or another – are highly sought after

1. Star Wars Trilogy – The Definitive Collection (NTSC, 1993)

Cleaned-up, THX-remastered and featuring remixed matrix-surround PCM soundtracks, this collector's edition showed what the LaserDisc format was capable of. All discs are in the CAV format, allowing obsessives to analyse scenes frame-by-frame. Extras include interviews, commentaries, trailers, storyboards, and a hardback book. Some bought LaserDisc players purely for this set...

2. se7en (The Criterion Collection boxset, NTSC, 1996)

Criterion went to town with this four-disc CAV version of David Fincher's 1995 crime thriller – but then again it rarely failed to satisfy the movie geek. Includes DD 5.1 as well as matrix surround soundtracks, plus a letterboxed transfer sourced from a special Deluxe Labs' CCE (Color Contrast Enhancement) print. Dripping with features, including a commentary by Fincher and friends.

3. Goldfinger (Criterion Collection, NTSC, 1991)

In 1991, Criterion released the first three James Bond films in CAV-format editions. Transfers were fine for the standards of the day, and the soundtrack flexibility of NTSC discs was harnessed to good effect to include commentaries. But someone wasn't happy with the content of the chat tracks, and all unsold product was recalled. The commentaries haven't made it onto later formats – but you can find them online...

4. The Golden Age of Looney Tunes Vol. 3 (MGM/UA, NTSC, 1992)

On the fifth disc of the third set of MGM/UA's classic Looney Tunes releases featuring Bugs Bunny, Daffy Duck *et al* is a collection entitled 'Politically Incorrect'. The titles included – among them *Sioux Me*, *Inki and the Lion* and *Wake Up the Gypsy in Me* – haven't been released since on any format, due to their – as it says – politically incorrect nature. A disc for Looney completists.

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World's best home cinema?

The owner of this 4K/Dolby Atmos bunker can sit back happy, as it's been named Best Home Theatre by CEDIA's Global Awards...



KIT CHECKLIST

SONY: VPL-VW1100ES 4K projector
SCREEN EXCELLENCE: Acoustically transparent projector screen with 4K weave
MARANTZ: AV8802 Dolby Atmos pre-amp
ARAGON: 5 x 8008-B two-channel (200W) power amplifiers; 3 x Iridium-B mono block (400W) power amplifiers
ZENE: DZ-24DSP two-channel parametric equalizer
JAMES LOUDSPEAKER: 4 x M-1000 subwoofer amplifiers
GTL SOUND LABS: AE963 surround speakers; AP Platinum LCR speakers
BAY AUDIO: 2 x PTM+ 12 12in 'Impact' subwoofers; 2 x PTM+ 15 15in 'Rumble' subwoofers
OPPO: BDP-105 Blu-ray player
CONTROL4: C4-HC-800 controller; SR-250 wireless remote control
FORTRESS: Kensington cinema seating
IMAGE: 2096 cinema seating
QUEST: QuestAI acoustic panels



STEP INSIDE THE first ever winner of a CEDIA Global Award, a new accolade which sees custom theatres from Europe, North America, Asia Pacific and the rest of the world go head-to-head. This sci-fi-themed cinema room, the work of Chinese company Zene, has grabbed the coveted Best Home Theatre title. Which essentially makes it the Floyd Mayweather of AV rooms.

Featuring a wall-hugging CinemaScope projector screen, Sony 4K PJ, Dolby Atmos sonics and extensive sound and image calibration, it's certainly a cut above the home cinema norm. A fact that's hammered home when you consider that the front three speakers are each individually powered by 400W monoblock amplifiers, and that two types of sub are used – some for 'impact', and some for 'rumbles'. Keeping a lid on all that home cinema hedonism is a custom-made sound isolating double-door, rated at -40dB. We know which side we'd like to be on, of course... ■ >

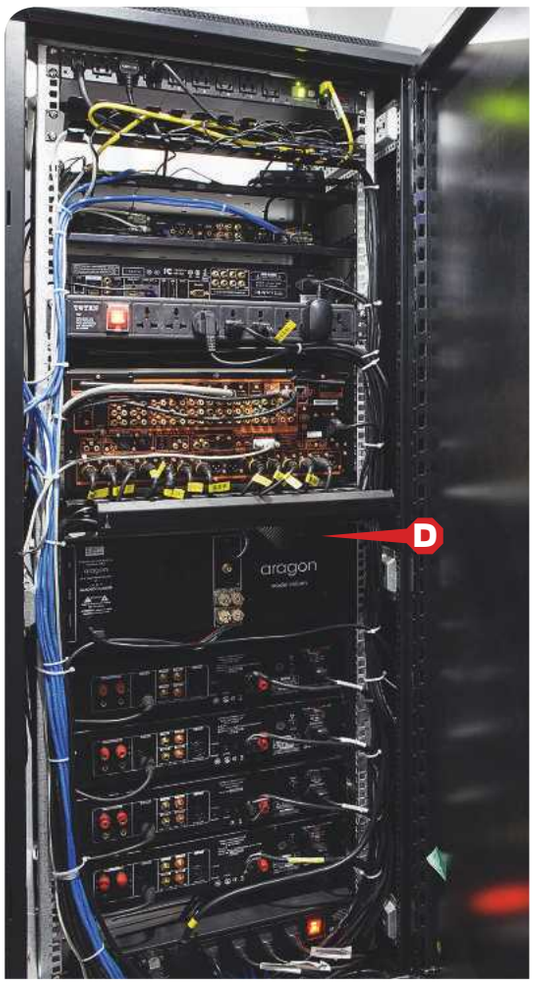
A. Ready for anything

The 2.35:1-ratio Screen Excellence projector screen uses the company's woven acoustically transparent 4K material to work in harmony with the front LCR speakers and Sony projector

B. Feel the Force

The 'I swear I've seen that somewhere before' lighting scheme is all overseen by integrated Control4 automation, which also handles AV hardware operation







C. A sound idea
Keeping the room's Dolby Atmos soundfield in check are acoustic panels from American sound specialist Quest, plus this leak-limiting bespoke double-door

D. Plug and play
The rack offers both front and rear access, making kit maintenance and swap-outs easy. No fewer than 12 separate power amplifiers are installed, fed from a Marantz AV8802 pre-amp

E. Two flavours of bass
Hidden in-wall are four subwoofers from Bay Audio – a pair of 12in models chosen, says Zene, to handle the 'impact zone' (40Hz-80Hz), and another pair of 15in woofers for even lower frequencies

F. Magnificent Seven
There are actually two different seating models here – the front three are Fortress Kensington recliners, while the rear four are from Image. All have personal tray tables for mid-movie snacking




F

MUSICAL IMAGES

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REVIEWS

➜**HARDWARE** **ACER** 4K DLP projection makes its domestic debut **PANASONIC** Entry-level UHD BD spinner **ORBITSOUND** Stereo Bluetooth soundbar **BENQ** Full HD gaming projector **GOLDENEAR** 2 x 8in home cinema subwoofer **NEAT ACOUSTICS** Space-saving floorstanding speaker array **PHILIPS** 43in 4K Ambilight TV **B&W** Signature P9 headphones **& MORE!**



Direct credit

Sony marries direct LED backlighting with a sleek design and advanced processing to create the 55in XE9005 Ultra HD TV. We give it a run through its paces on p50...

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed



HOME CINEMA Choice RECOMMENDED



UHD DLP projection brings new clarity to the home cinema arena. **Steve May** reports

Ace debut for 4K DLP

AV INFO

PRODUCT: 4K DLP projector

POSITION: Acer's flagship Ultra HD model, above various 1080p home cinema options

PEERS: Epson EH-LS10500; JVC DLA-X5500

1. The V9800 is Acer's only UHD home cinema projector

2. The handset is backlit and uncluttered

It's been a long time coming, but finally the DLP camp is ready to roll out UHD projectors for the home. Until now, if you wanted 2160p resolution on the biggest of screens, your choice was either to buy one of Sony's native SXRD offerings or opt for a pixel-shifting pretender from JVC or Epson. The arrival of DLP 4K seeks to blow that cosy duopoly out of the water.

DLP stalwarts Optoma and BenQ have 4K models imminent, but it's Acer – perhaps not the best-known brand in home cinema circles – that has got its product, the V9800, to our test bench first.

Physically, it's no shrinking violet. In terms of footprint, it's comparable to JVC's bulky DLA fleet or Sony's opposition. In short, you'll not be using this on a temporary basis. It's a big projector that demands a proper installation.

The chassis is gloss black, with smart, rounded edges. The deep-set lens is flanked by ventilation grilles, while all inputs and power jack are side-mounted. It looks less designed and more... determined.

Connections include dual HDMIs and a VGA PC input, Ethernet, wired remote jack and a mini USB-B terminal. Only the primary input is HDMI v2.0 compliant, although this limitation shouldn't prove too much of an issue if you're using an AV receiver for HDMI switching. For control purposes and screen syncing there's a 12V trigger and RS232.

The IR remote control is a chunky handful, but uncomplicated. For home theatre use, it's helpfully backlit with a vivid shade of blue and offers direct access to the three inputs, alongside key picture adjustments (brightness, contrast, saturation, sharpness, Super Resolution upscaling and gamma).

With the V9800, you'll need a reasonably sized room to supersize your movies. The throw ratio is 1.36-2.03:1, with a 1.5x zoom – you can cast a 100in image (diagonal) from 3m. Both zoom and focus are manual, so no remote zooming here; a test pattern helps snap the projector fully sharp. Lens shift options are fairly generous, with 27 per cent horizontal adjustment, and 65 per cent vertical.

Living with the Acer is par for the projector course – the 4K tech may be new, but it doesn't bring with it any new operational tricks. The onscreen menu comprises a simple, easy-to-navigate tabbed box. If the remote gets lost down the sofa, located on the side of the projector and hidden behind a sliding flap are on-body menu navigation buttons.



Dramatic debut

But enough set dressing. What's this big puppy like in action? Well, my thumbs are up (which makes writing surprisingly difficult). The V9800 delivers images of eye-kissing clarity. You know that stuff that wows on UHD flatscreens? Well it looks just as dramatic here.

For example, 4K footage from *Planet Earth II* (via the iPlayer trial on Sky Q, not the UHD disc) appears utterly gorgeous. I ooohed and then I ahhhhed. And then I ooohed some more.

Of course, there are viewing decisions to make. Choose Acer's Standard picture mode and this predictably offers a higher APL (Average Picture Level) than the REC.709 option. In the latter, *Planet Earth II*'s leopard's coat has a distinctly orange hue, its spots providing deeper contrast. Fur and foliage exhibit extraordinary detail and colour cohesion; rain drops fall from a leaf, backlit for extra sparkle. In a fully dark room there's plenty of dimensional depth evident. The Standard mode is comparable, but noticeably a tad brighter. I'd probably use Standard for TV studio fare, concerts and the like.

More modes are Bright, sRGB, Movie, Dark Cinema, Game, Sport, Silent and a trio of User options.

At full blast (2,200 Lumens), the projector is bright for a dedicated home theatre model. Call up the Eco function and Acer drops it to 1,750 lumens. Either way, the V9800 should >



3

be viewed in a dark room environment (keep your popcorn close) to look its best.

While contrast seems high (Acer quotes a typically outrageous 1,000,000:1), the V9800's black level performance is, unfortunately, only average. It doesn't go completely black, more a dark grey and, consequently, subtle shadow detail can be lost. The lamp is a standard UHP job, and at times I really hankered for a laser light source (like that used in Epson's LS models), to give me better blacks. But then the V9800 is also a good deal cheaper than a laser projector, so there's an inevitable compromise to be had.

More comparable projectors price-wise, particularly from Sony and JVC, exhibit healthier black levels. Yet the Sony models are Full HD (such as the VPL-VW65ES) and JVC's don't support native 4K signals.

Acer's gamma default is 2.2, but there are options for 1.8, 2.0, 2.4 and BT.1886. You can save different configurations to the user presets.

Fortitude: Season 2 (Sky Atlantic, UHD) is all white tundra and dark shadows, with occasional gouts of dirty blood. The V9800 delivers this high-contrast thriller with stunning crispness. Headlights beam in the dark, while sequences set around the harbour area are rich in UHD detail – rusty fishing boats and ice-crusted parkas have tangible texture.

Tonality is beautifully smooth, with no noise at all, and there's virtually no sense of rainbow effect, traditionally created by the spinning DLP colour wheel. This colour fringing is usually evident in areas of high contrast, yet while *Fortitude* gives it every opportunity to present, the image remained flicker-free.

Incidentally, and as with Epson's EH-TW9300 (see *HCC* #266), the V9800 only supports Sky Q 4K in 8-bit mode. The 10-bit connection fails to yield a picture. I had no problem with a Panasonic DMP-UB900 using a 12-bit output, however.

4





5

Mirror (x four million) on the wall

So how does 4K DLP work? Texas Instruments has employed ingenious engineering to bring its solution into the home. Beneath the hood of the V9800 is a 0.66in UHD display chip; it's a derivation of the brand's commercial 4K 1.38in cinema silicon (used in the majority of 4K theatres worldwide). By combining the fast switching speed of the digital micromirror device (DMD) with clever image processing techniques, it's able to deliver an 8-million pixel image from four million mirrors.

This has led some to suggest that TI's 4K chip isn't a native UHD device, but this seems a little disingenuous. While there is some similarity in technique used by pixel-shifting 1080p projectors, each mirror is capable of switching over 9,000 times per second, which effectively creates two distinct and unique pixels on the screen. Your eyes aren't that fast.

And there is no visual sense whatsoever that the PJ isn't delivering a 4K 2160p image. A 4K test pattern is resolved cleanly and accurately; the results onscreen are clearly 3,840 x 2,160. And as this DLP 4K solution is built around a single chip, there is no possibility of panel misalignment, which could theoretically compromise the performance of a three-chip solution like 3LCD.

The projector is also HDR 10 compatible – and it's surprisingly effective. In the world of home theatre, projectors don't generally have the peak brightness to compete with flatscreen TVs, but this Acer debutant can really ping with dynamic fare such as *Mad Max: Fury Road* (UHD Blu-ray). When Tom Hardy is on the rack, his pupils sparkle with bright pin-prick intensity. In many ways, I felt the Acer's HDR performance to be more immediately

> 'The Acer's image clarity is high and its HDR performance is genuinely surprising for a projector'

impactful than that seen on the Sony HDR-enabled VW550ES. There are two selectable HDR modes (HDR 1 and HDR 2). I preferred the dynamic balance of the first. There's also HDR off.

Jessica Jones, like the rest of the Netflix Marvel TV stable, is a gritty, filmic-looking series that doesn't often reward those looking for UHD detail. But in HDR on this Acer, there are aspects of the image which stand out. Street lights have an intensity you'll not often notice, while the backlit booze in Luke Cage's dive bar provides enormous contrast. While that lack of deep black limits shadow detail, there's still solid punch to the picture. The V9800 makes high-end telly look cinematic.

A potential fly in the ointment when its comes to HDR TV is that Acer says there are no firmware upgrade plans to bring Hybrid Log-Gamma to the V9800. And it's not Dolby Vision compatible, either.

The PJ doesn't support a wide colour gamut. The six-segment RGBRGB colour wheel is REC.709 (Acer ExaColor) and sRGB-compliant only. The projector will take wide colour presented in a REC.2020 container (let's say from a UHD Blu-ray) and apply two-stage colour mapping and gamma correction to make it REC.709 compatible. It lacks the vivid hue reproduction of modern TVs, but – that said – there's no doubting the vibrancy of its images.

SPECIFICATIONS

3D: No ***4K:*** Yes. 3,840 x 2,160 via Texas Instruments 4K DLP chip ***HDR:*** Yes. HDR 10
CONNECTIONS: 2 x HDMI inputs (one v2.0); PC VGA; Ethernet; mini USB-B
BRIGHTNESS (CLAIMED): 2,200 ANSI Lumens ***CONTRAST RATIO (CLAIMED):*** 1,000,000:1 ***ZOOM:*** 1.5x manual ***DIMENSIONS:*** 562(w) x 470.7(h) x 216.2(d)mm
WEIGHT: 15kg

FEATURES: 4K DLP DMD light engine; RS232; 12V trigger; claimed lamp life of 3,000 hours (Standard)/4,000 hours (Eco); fan noise of 23dB (Eco); ISF calibration; Acer ColorSafe II; Acer ColorPurity RGBRGB colour wheel; sRGB; Dynamic black; horizontal/vertical lens shift; 1.36-2.03:1 throw ratio; one-year warranty (lamp); five-year warranty (DLP chip)

PARTNER WITH



FORTITUDE: This Sky Original sci-fi series mixes British and American talent (including Michael Gambon and Stanley Tucci) with Scandi Noir stylings to memorable effect. Seasons 1 and 2 are available on Sky Q in Ultra HD; S1 is out on BD.

While there are no image interpolation modes available to retain detail on fast-moving action, the V9800 thankfully doesn't exhibit excessive blur. More importantly, whether you choose Standard, Sports or Movie mode there are no motion artefacts around moving objects. Pans have a low level of judder, but it's not objectionable.

DLP single-chippers have always had a reputation for ruthless clarity, and that trait is clearly evident here too; the benefit of a single-chip solution like this is perfect convergence. There's blade-like detail to its images when watching Blu-ray and streamed HD.

The Eco setting limits operational noise to around 23dB, down from 26dB. However, the spinning colour wheel has a rather high and constant note which I found a little annoying. This could be an issue, depending on where the projector is located. Any home cinema sound system worth its salt will mask it for much of the time.

DLP delivers

The Acer V9800 is an exciting first outing for 4K DLP. It suffers somewhat from a limited black level, but image clarity is high and its HDR performance is genuinely surprising. This is a consistently entertaining projector to watch.

Given the fact it's a nascent technology, it's also attractively priced. The sheer size of the unit takes some accommodating, though, and the lack of support for HLG could be a deal-breaker for some TV-centric enthusiasts.

Ultimately what we actually have here is a rather thrilling taster for 4K DLP home cinema projection in general. I suspect the tech will reshape the market. Indeed, Acer confides that it has more, smaller models ready to roll later this year. The UHD DLP bandwagon is about to roll, and I'm on board ■

HCC VERDICT ★★★★½

Acer V9800
→ £4,000 → www.acer.com

WE SAY: This 4K DLP debutant delivers a sometimes stunning UHD HDR performance, aided by clarity and luminance, albeit hampered by mediocre blacks. Definitely one to audition.

3. A 1.5x manual zoom gives a healthy 1.36-2.03:1 throw ratio

4. One of the Acer's HDMI inputs supports HDCP 2.2 protected content

5. Hidden behind a flap on the PJ are controls should you misplace the handset

Strapped for space? **Ed Selley** thinks Neat might have the system for you – if you can suspend your disbelief



HOME CINEMA Choice RECOMMENDED

An IOTA of difference

AV INFO

PRODUCT: Space-saving mini-floorstanding 5.0 array

POSITION: The IOTAs are Neat's entry-level offering

PEERS: Spendor S3/ 5R2 CR3; Quad S1

Sometimes, the picture that accompanies a review tells you more in a fraction of a second than several lines of text. That's probably the case here. Neat's IOTA system looks odd – very odd, actually, for those used to seeing floorstanders tipping a metre high and drivers facing forward.



1. Each Alpha floorstander hides a down-firing 5.25in bass unit

The IOTA series is the most affordable range of speakers from Neat Acoustics and the result is decidedly unusual. The company is taking accepted wisdom about loudspeakers and either giving it a good bending or ignoring it altogether.

The two-way standmount IOTA was the first model to appear a few years back, and marked something of a departure for Neat. While the 4in long-throw polypropylene midbass driver is clearly related to the unit that we saw in the Motive five-channel package reviewed in *HCC* #240, in the IOTA it is partnered with a ribbon tweeter – the only Neat speaker to be so equipped. To reduce the size of the cabinet this sits alongside the driver rather than above it.

This gives it that slightly odd appearance – with only the placement of the badge offering a clue that they haven't fallen over on their side – and means it really is very small indeed. At 13cm high and 20cm wide, it is dinkier than some speakers that are classed as satellites. Despite this, the IOTA is marketed as (and works as) a full-range speaker. Generally, it's sold as a stereo model but is available individually to function as a centre, as is the case here.

Mine's a half

While turning standmount speakers into floorstanders happens all the time, the IOTA doesn't look like an especially promising candidate for the task. Yet Neat Acoustics has duly has spawned the IOTA Alpha. This is a floorstanding speaker that stands a mere 45cm tall – a height smaller than some large 'bookshelf' designs.

Depending on how your room is laid out, you may find that the Alpha is barely visible from your listening position. To make this work, the Alpha is not a straight copy of the standmount; in order to grant the two drivers a little more elevation (operating here in a sealed chamber, whereas in the standmount version they are ported), Neat has mounted them at an angle so they shoot upward and forward at the same time. Happily, having the ribbon tweeter and midbass unit mounted side-by-side aids with time alignment. The idea is that the output will still arrive at ear-height.

The extra punch buyers will expect of a floorstanding speaker is delivered by a driver you can't see. Neat has fitted the Alpha with a downward-firing 5.25in bass driver and a rear bass port. The result is that this little speaker claims an extension down to a surprisingly low 33Hz, albeit with a bit of roll off. This feature is important because Neat doesn't make a subwoofer and company head Bob Surgeoner is keen to stress that this pack can work happily without one. While I respectfully did this for some of my testing, a BK Electronics P300SB and GoldenEar SuperSub X (see p54) have also undertaken LFE duties.

The small size of the IOTA system means it is simple to place and unlikely to cause family arguments. Although rear-ported, they aren't fussed by proximity to walls, with Neat recommending placement 'very close'. Rear fixing posts on the IOTAs allow then to be wall-mounted. Lengthy spikes on the Alphas both keep them steady on your floor and give their bass drivers room to fire.

>

The speakers feel solid and rugged, but aren't likely to win any 'style' awards. Curves are absent.

In the black system seen here, the IOTA is finished in a sheen while the Alpha sports a black ash. Currently, if you want a colour and finish match you'll have to opt for satin white.

The IOTAs might be small but they're best given reasonable amplification, as they aren't terribly sensitive and impedance can dip fairly low (the nominal rating is 6 Ohms). Consider the package price of £2,500 and that'll give you an idea of the sort of AVR to match them with.

Up and at 'em

While it seems improbable that a pair of floorstanders this small – in my listening room they seem dwarfed by my display – can work, they genuinely do. Sound projection beyond the confines of the cabinets is tangible; there's little sense that the Alphas are operating below your eye-line. Credit to Neat's engineers for accomplishing this trick.

The front soundstage sounds even and expansive. The effect from front to back is slightly more directional, but there's still an impressive soundfield crafted for a speaker this size.

What stands out most about the IOTAs is a sense of bite and attack to their performance that can be lacking on some rivals. The destruction of the Enterprise in *Star Trek Beyond* (Blu-ray) comes through as a visceral and potent event; as well as a surprising amount of weight present even from the smaller IOTAs, there's an energy and vibrancy to the performance that is hugely captivating. Their fine detail retrieval is also deeply impressive. The medley of metallic noises as the drilling spacecraft hits home is perfectly captured. Everything is stitched together in an involving way.

That said, there's no harshness here. The ribbon tweeters used across the package manage to stay smooth and sweet even with confused and aggressive material. The visual insanity of the runway sequence in *Fast & Furious 6* sounds controlled, the Neats marshalling the action with aplomb. Dialogue is kept intelligible amidst an orgy of jet engines, cars and explosions, with effects spread wide.

Integration between the ribbon and the 4in midbass driver convinces. There is never that rather unwelcome step-change between the two units that can bedevil some designs of this type. The system even – to a point anyway – functions well without a subwoofer in tow. After some tests, it would be fair to say that the IOTA Alpha is good down to the 40Hz region without significant roll-off, and it feels powerful and lively all the way down to this point. The speed and cohesion exhibited means that if you do choose to augment them – and for a proper full-range experience, this will be required – you'll want to find a fast *[and furious? – Ed]* subwoofer to do them justice.

Another attribute of the IOTAs is that when movie night ends and you have some TV viewing to attend to, they continue to function well. They're capable with dialogue-driven material, and for a relatively small box the solo unit acting as a centre speaker has healthy clarity and projection. Even with the lower bitrate of television soundtracks to work with, the whole package stay rich and full-bodied.

A limitation, however, is that they aren't perfect partners for low-level listening. Best work is done with some volume behind them; once you drop below a certain level, I found they lost some of that sparkle and clarity. On the other hand, the Alpha floorstander is a sensational speaker for music, as befits a design that Neat expects to sell mostly as a two-channel pair.

Hiding in plain sight

Not everyone is going to be sold on the aesthetics of these speakers, nor will some even consider a design that eschews all those recommendations about tweeters at ear-height. If you can look beyond that, however, they are an enormous amount of fun, with floorstanding speakers that effectively hide in plain sight.

In fact, even if you don't need such a feature, the IOTAs are still worthy of note. They beguile with a performance that hits the sweet spot between energy and refinement. Small in stature, big in enjoyment ■



2. All the IOTA cabinets are rear-ported

SPECIFICATIONS

IOTA Alpha
DRIVE UNITS: 1 x 2in ribbon tweeter; 1 x 4in polypropylene midbass driver; 1 x 5.25in down-firing bass driver ***ENCLOSURE:*** Ported ***FREQUENCY RESPONSE (CLAIMED):*** 33Hz-22kHz ***SENSITIVITY (CLAIMED):*** 86dB ***POWER HANDLING:*** None given ***DIMENSIONS:*** 200(w) x 450(h) x 160(d)mm ***WEIGHT:*** 6.8kg

IOTA
DRIVE UNITS: 1 x 2in ribbon tweeter; 1 x 4in polypropylene midbass driver ***ENCLOSURE:*** Ported ***FREQUENCY RESPONSE (CLAIMED):*** 60Hz-22kHz ***SENSITIVITY (CLAIMED):*** 84dB ***POWER HANDLING:*** None given ***DIMENSIONS:*** 200(w) x 130(h) x 160(d)mm ***WEIGHT:*** 3kg

PARTNER WITH



B-TECH BT33: The IOTAs feature wall-mount fixings, but the binding posts and rear ports mean some space must be retained. Neat suggests this affordable (£15-per-pair) model, which can hold loads up to 5kg and offers up/down/sideways angling.

HCC VERDICT

★★★★½

Neat IOTA 5.0
→ £2,500 → neatacoustics.com

WE SAY: This might look a little kooky and it's demanding of partnering equipment, but the IOTA system packs an entertaining punch into a very small space.

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AV INFO

PRODUCT:
55in direct-lit 4K LED TV

POSITION:
Below Sony's direct-lit ZD9 and edge-lit XE93 models

PEERS:
Panasonic 55DX802; LG OLED55B6

Is direct LED backlighting the panacea for LCD HDR? **Steve May** is enamoured with the 55in XE90

Sony's mid-range marvel

The vast majority of LCD TVs are edge-lit. They might be winningly thin and relatively cheap to make, but edge-lighting introduces all manner of picture problems. Despite increasingly ingenious solutions, edge-lit tellies invariably involve some level of imaging compromise. And this is exasperated with HDR. Delivering a precise peak white is no easy task if your backlight bulbs sit to the side.

Direct LED backlighting is an attractive solution. Better precision, through local dimming, hopefully means an end to splishy-sploshy highlights. So it's with some interest we scrutinise Sony's KD-55XE9005, a 55-incher that's one of a number of screen sizes available in Sony's XE90 line, and offering this more direct approach.

Design wise, the XE90 is a cutie. The centralised pedestal stand makes it easy to accommodate on everyday furniture, with the bonus of integrated cable management. The bezel is ultra thin, dressed with a smart aluminium trim. The illuminated Sony badge is understated. The look is very minimal and on trend, and unlike Sony TVs last year, you don't need to spend an entire day screwing multiple stand parts together.

All four HDMI inputs support HDCP 2.2 sources. There's also component AV for old-school hardware devotees, an optical digital audio output, three USBs and Ethernet.

The XE90 ships with a single remote. There are dedicated Netflix and Google buttons, but a firmware update is needed to enable the integrated microphone. The set also comes with an IR blaster, enabling you to control other devices.

Eyes front!

Image quality from Sony's mid-range 4K TV immediately impresses, and you don't need to look hard to see the benefits of that forward-facing backlight.

Firstly, black-level uniformity is demonstrably better than that typically seen on large edge-lit displays. It doesn't splotch and pool light at the edge of the screen, making for a less distracting viewing experience in curtains-shut movie-watching conditions.

And, yes, the XE90 looks great with HDR. While Sony never divulges peak luminance figures for its sets, it's clear the XE90 sits some way beneath the ZD9 [see *HCC* #268] and XE93 [see *HCC* #271]. It operates in a palatable middle ground that still offers dynamic realism (albeit less impactful than on pricier displays), yet doesn't induce eye fatigue.

The Amazing Spider-Man 2 (UHD Blu-ray) bristles with neon highlights and looks superb. There's a luminescence to its images here which is beguiling.

The XE90 uses a wide colour gamut Triluminos panel for expansive hues – deep reds and rich greens in particular are lush. When the Green Goblin confronts Spidey at Oscorp Power, the picture is startlingly vibrant.

While the direct LED backlight works very well for SDR material, there is still some bloom around bright HDR highlights. There doesn't appear to be enough LED light clusters (no figure is given) to really tighten up local dimming to a pin-point level. Test footage of an HDR firework display clearly reveals these halos. However, these blooms are transitory. When the set needs to get dark, the black level feels suitably pronounced.

Smooth mover

The panel is native 100Hz and this clearly helps motion handling, although Sony's Motionflow tech, in a variety of flavours, is present to boost performance. I achieved the cleanest results with Standard and Custom (set Smoothness to '3' and Clear to 'Min'). While effective, Clear is far too dark for general viewing, while Smooth generously adds ruinous motion artefacts that'll have you tearing your hair out.

The XE90 introduces a new picture processor, the X1 HDR, to Sony's UHD screen fleet. It's an evolution of the first-gen X1, borrowing Super Bit Mapping 4K HDR and Object Based HDR Remastering from the range-topping X1 Extreme silicon used in this season's flagship screens. The former is a welcome Sony staple which reduces >



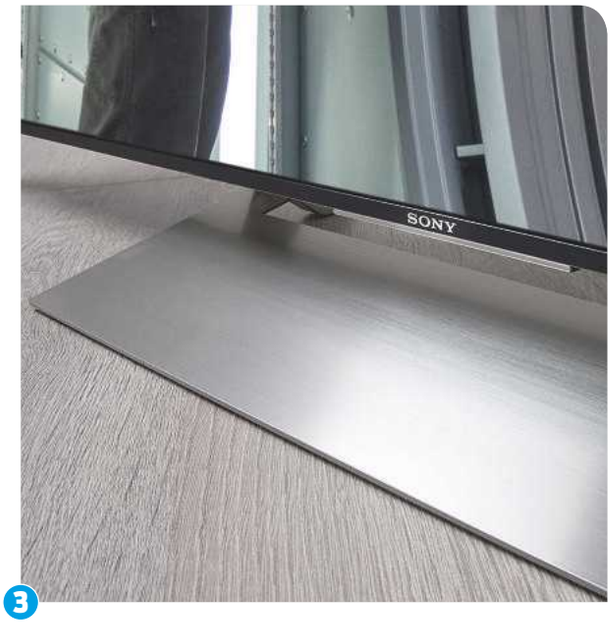
1. No touchpad remote fun here, just a traditional zapper

2. The TV will receive a firmware upgrade for HLG HDR, but not Dolby Vision



NOT RED DWARF...
Chris Pratt is alone in deep space in sci-fi *Passengers* – Blu-ray, p94

HOME CINEMA Choice
BEST BUY



3

SPECIFICATIONS

3D: No ***4K:*** Yes. 3,840 x 2,160 resolution ***HDR:*** Yes. HDR 10 ***TUNER:*** Yes. Freeview HD; satellite ***CONNECTIONS:*** 4 x HDMI (all v2.0 with HDCP 2.2); component AV; optical digital audio output; 3 x USB; Ethernet ***SOUND:*** 2 x 10W ***BRIGHTNESS (CLAIMED):*** N/A ***CONTRAST RATIO (CLAIMED):*** N/A ***DIMENSIONS (OFF STAND):*** 1,228(w) x 707(h) x 60(d)mm ***WEIGHT (OFF STAND):*** 16.9kg

FEATURES: Dual-band Wi-Fi; USB multimedia playback; DLNA; X1 HDR processing engine; Android Smart platform with Netflix, Amazon Video, YouTube; YouView rollback EPG; Bluetooth; Google Cast; Miracast screen mirroring; 4K X-Reality Pro; Motionflow XR1000Hz

PARTNER WITH



PANASONIC DMP-UB300: Panasonic's newest UHD BD spinner is also its most affordable, selling for around £240. It's bereft of some common features (Wi-Fi, secondary HDMI output) but that might not put you off. See p70 for more.

3. **The XE90 TV sports a clean, unfussy bezel and stand design**

banding from low-bitrate sources. The latter is all-new, and upscales SDR content to give an HDR-like image. It's applied by default, and works brilliantly well. You might think any such *faux* HDR would simply make images look over-cooked, but it's a lot more subtle. However, there are film fans who will want to see some SDR content unfettered by HDR remapping, perhaps more vintage material. If that's the case, use the Cinema Pro preset.

Another picture processing tool in the set's armoury is 4K X-Reality Pro. This adds X-tra bite to detail and texture. It's kind of like a well-behaved Sharpness adjustment. During casual viewing it seems to do a decent job, however it clearly adds artefacts to native UHD material.

> 'Sony's platform of choice remains Android, bolstered by a YouView roll-back EPG and catch-up/VOD services'

Quite whether the process improves the original source is up for debate. I'm really not sure what to think about it. At least you can manually adjust; the point at which artefacts start to become noticeable is around 30 on the sliding scale.

Contrast, with Sony's X-tended Dynamic Range Pro tool in action, is reassuringly high. By way of a guide, Sony says the set has five times the contrast of a conventional LED TV. So many brands make these sort of claims you wonder whether 'conventional' LED TVs actually exist.

I spent an inordinate amount of time studying the all-black catsuit of Milla Jovovich in *Resident Evil: Retribution* (Netflix), and can confirm it's rendered convincingly black. That movie uses extensive CG to create very contrasty backdrops for the relentless fight sequences, and this set has a field day remastering these into wannabe HDR.

While the XE90 works with HDR 10 content, it's not in line for a Dolby Vision HDR update, like the XE93 and ZD9 sets. The XE90 will, however, be enabled for Hybrid Log-Gamma broadcast HDR when services start.

In Game mode, play is smooth and responsive, and exploring *The Last Guardian* (PS4) in HDR doesn't really have me hankering for more brightness than what's on offer. The opening sequence provides plenty of opportunity to deliver bright sun-dappled effects as you trot around the temple. Shafts of light break through and illuminate the crest of your beast with a realistic dazzle. When you run into full sunlight, you'll want shades.

Perhaps inevitably, there is some loss of colour and contrast when this TV is viewed off-axis, so it's worth thinking about where you intend to place it.

Despite not having any visible speakers, the XE90 sounds half decent. With 2 x 10W amplification, it confounds expectations with clear dialogue and a robust mid-range. There's an overt stereo soundstage. Down-firing drivers angle out for greater coherence.

When it comes to smart skills, Sony's platform of choice remains Android, bolstered by a YouView roll-back EPG and all the main channel catch-up services, plus the Netflix, Amazon Video and YouTube trinity. Google's Chromecast is built-in. There's an Opera web browser, too, but using it is slow and laborious. To save having to always negotiate the main Android interface, a handy Action Menu pulls up picture, sound and sundry settings, including a Football mode which you'll never use.

Crowd-pleasing

The XE90 is a mid-range set that brims with appeal. The direct backlight offers tonal uniformity for all types of content, but particularly movies, and helps avoid some of the curious artefacts which HDR continues to inflict on edge-lit rivals.

From colour reproduction to detail and motion, it impresses. Factor in that price point and you have a 4K screen that stands out from the crowd ■

HCC VERDICT ★★★★½

Sony KD-55XE9005

→ £1,700 → www.sony.co.uk

WE SAY: With the XE90, Sony offers a high-performance direct LED screen at a mid-range price. Image quality is impressive with SDR and HDR. Just don't look for 3D playback...

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1

Nuclear-powered compact bass bin

GoldenEar has packed two active drivers, two passive radiators and over 1,000W of grunt into a subwoofer while keeping it on the small side. **Ed Selley** admires the ingenuity

AV INFO

PRODUCT:
Premium compact subwoofer

POSITION:
Below the SuperSub XXL, which uses 12in drivers

PEERS:
SVS SB-13 Ultra; B&W PV1D; KEF R400b

WE SEEM TO be in the middle of a faintly deranged arms race on the subwoofer front at the moment. The challenge of this contest is to see who can direct the largest amount of power at the largest spread of drivers in the smallest overall box (although a separate competition to design the biggest device going is also apparently underway). And if this is an arms race, then GoldenEar has decided to go nuclear and release two new subwoofers. The smaller unit, the SuperSub X, is seen here. Just a shame for my metaphor that it isn't called Trident...

Specification-wise, the GoldenEar is fairly eyebrow-raising. In a chassis no more than 35cm in any direction, it has two 8in opposed drivers and two 9.5in by 10.5in passive radiators, meaning that four of its notional six sides are given over to radiating area. And given that at least one of them needs to have controls and inputs on it, we're fast approaching the maximum a cube sub could possibly pack. Feeding this driver complement is a faintly alarming 1,400W of power. Basically, this is a small but extremely furious box (the step-up model, the SuperSub XXL, gains 200W and increases driver size to 12in for the active units, and 13in x 15in for the passive ones).

Four's company

The thinking behind the SuperSub X's armada of drivers is more logical than trying to win at subwoofer top trumps. As the forces generated by the drivers are opposed and balanced, the performance of the sub should be more controlled and even than that engineered by a single driver hammering away. GoldenEar claims that an additional benefit should be a more even fill of low-frequency energy in-room. Frequency response is

rated all the way down to 12Hz, but without any roll-off figure specified.

The connectivity on the SuperSub X is straightforward if a little on the thin side. A pair of phono connectors allow for a stereo signal to be sent to the unit and if you flick a switch, the left-hand connection will become an LFE feed that bypasses the internal crossover. Beyond this, you get controls for volume and crossover points and can choose between auto on and always on. This means that there is no high-level input, phase control or remote control, all of which are commonly encountered at this price point. Compared to rivals from SVS, like the slightly more expensive SVS SB-13 that features such niceties as onboard EQ, the SuperSub X feels a tad sparse.

On the plus side, the small size of this sub makes it easy to accommodate. You could, I'd hazard, get away with sneaking it into a regular living space. It's built like a small tank and is impressively heavy. And while it would be a push to call it attractive, it won't scare the horses.

A minor point of irritation is that the LFE input seems susceptible to ground hum. This was cured by using a heavily-shielded stereo interconnect, doubled up into a single length cable, via coupler.

Taking control

Partnering the Neat IOTA five-channel package (p46), the SuperSub immediately demonstrates a refinement over the more affordable ForceField models, in that despite the large radiating area and prodigious power output, it feels controlled and like it was designed to handle this much energy. Even under severe provocation, the cabinet remains completely inaudible and free of vibration, whereas when I previously played with a third-of-the-price ForceField3, it actually managed to move around a bit, like a dog tearing free of its leash.

This allows you to concentrate on the task in hand – enjoying movies. With films with a hefty bass track, the GoldenEar is absolutely devastating. Its ability to load the room during the Hong Kong fight sequence in *Pacific Rim* (Blu-ray) is absolutely joyous. Should you wish to have an inkling as to the forces involved in being hit in the face with a small cargo vessel, then this is the device for you.

Put another way, if you didn't know the dimensions of the subwoofer generating this level of fury, you'd swear blind it was much larger.



2

SPECIFICATIONS

DRIVE UNITS: 2 x long-throw 8in opposed drivers; 2 x 9.5in x 10.5in opposed quadratic passive radiators ***ENCLOSURE:*** Sealed ***FREQUENCY RESPONSE (CLAIMED):*** 12Hz-250Hz ***ON BOARD POWER:*** 1,400W ForceField digital amplifier ***REMOTE CONTROL:*** No. ***DIMENSIONS***: 356(w) x 324(h) x 337(d)mm ***WEIGHT:*** 18.2kg ***CONNECTIONS:*** Stereo phono input; LFE input

PARTNER WITH



GOLDENEAR SUPERSAT: An aesthetic match, GoldenEar's SuperSat line comprises satellite models and slim-line tower and centre channel speakers, allowing you to build a 5.1 or 7.1 setup. Pricing begins at around £250 for a single SuperSat 30.

Neither do its talents end at simply being wilfully unsubtle. Using the SuperSub X to produce the LFE track of *Kingsman; The Secret Service* (Blu-ray) is also an impressive experience. There is an appreciable filling out of the bottom end of the orchestral score, and Colin Firth's artfully choreographed fight sequence in the pub never feels overblown or out of scale, but instead benefits from the visceral and believable force of punches being landed and bullets thwacking off umbrellas. I admire the way in which the SuperSub X goes about its business.

But there are caveats. There is a speed and tempo past the point where the cohesion and clarity of the low-end does start to suffer. The pounding techno background of the 'Hero's Duty' sequence of *Wreck it Ralph* (Blu-ray) has a slight sluggishness to it that robs it of some of the energy it really needs to be completely convincing.

This is also present in my regular go-to torture test – the final performance of jazz drum explosion *Caravan* in *Whiplash* (Blu-ray). Through the SuperSub X, the skilfully-worked kick drum isn't the defined series of beats it is on some devices, and the piece isn't quite as funky-sounding as a result. I'm not a huge fan of using subwoofers for music *[you're sacked – Ed]* but if you do need one for both roles, this is not really the SuperSub's comfort zone.

Ballistic bass

So with this woofer it pays to play to its strengths. The SuperSub X is a thrillingly ballistic performer that hits far harder than a box with these compact dimensions has any right to. It can create bone-jarring impacts, and goes deep enough to find soundtrack secrets that can be overlooked. It's clear that GoldenEar has worked extremely hard to ensure that its vast power output is contained and used to good advantage, and it's easy to live with day-to-day. A remote control or some form of EQ would make it more fun, though, and it's not the most musical device you'll hear at the price ■

1. **The top and bottom sides of the SuperSub X house quadratic passive radiators**

2. **Back panel controls are crossover and level, plus auto signal detection**

HCC VERDICT ★★★★½

GoldenEar SuperSub X
→ £1,450 → www.goldenear.com

WE SAY: Away from its driver/amp combi, the specification here is slightly thin – yet the GoldenEar delivers big-box thrills (favouring punch rather than poise) from a small cabinet.

AV INFO

PRODUCT:
Bluetooth soundbar with airSOUND tech

POSITION:
Below Orbitsound's BAR A70 soundbar/sub combi

PEERS:
Cambridge Audio TV5 v2;
Q Acoustics M3



1

Mark Craven lets Sly Stallone and the gang loose with Orbitsound's one-box speaker system

1. Stand the One vertically and the front display is still visible top-left

2. The handset features large (and somewhat clicky) volume keys

3. The speaker can be wall-mounted using rear VESA fixing points



2

Something in the air with this One

British audio brand Orbitsound has a narrow focus – the One P70 soundbar here is joined by only two other 'bars, plus a wireless Bluetooth speaker, in its hardware stable. But when it comes to sonics, it aims to be anything but narrow. Instead, Orbitsound is on a mission to kill the sweet spot...

To achieve this, all its products feature proprietary airSOUND technology, a mashup of driver configuration and signal processing. In essence, the idea here is to use a front, centrally-located channel to deliver the key 'detailed' sounds of a stereo mix, and employ side-firing drivers to back this up with spatial information mined from the source (predominantly, we're told, upper-mid and high frequencies).

The outcome, says Orbitsound, is that off-axis listeners aren't forced to suffer the effects of time delay and unbalanced imaging that occurs with directional stereo speakers and soundbars. For the latter, typically installed in living room environments with plenty of unconventional listening positions (armchairs in the corner, for instance), it's an idea that certainly appeals.

In mid-orbit

The One is the newest addition to the Orbitsound TV audio lineup. Priced at £300, it undercuts the flagship BAR A70 model by some £200, sharing the same price



point as the more compact, and now slightly elderly, BAR M9.

Like the M9, the One is a single-box solution, with no additional subwoofer, nor the means of adding one via a subwoofer output. It still claims a 2.1 performance, however, by virtue of an integrated 5.25in bass driver. This works in tandem with a quartet of 2in drivers – two mounted centrally, and one side-firing at either end. There's an onboard amplifier of unspecified power.

Connectivity is a little sparse. As well as no subwoofer output, there's no HDMI socketry. You feed the One via optical digital audio, 3.5mm aux or Bluetooth.

While Orbitsound's BAR A70 throws together shiny black trim, speaker grilles and curved edges, this more affordable option is also more traditional. It's a 70cm-rectangle, with its body mainly adorned by its grille(s), except for edging. It stands 7.7cm high when laid flat, and is also fairly heavy, making you feel like you're getting a lot for your £300.

In addition to optical/3.5mm cables, the One is bundled with a petite, rubber-finished learning remote that's quite directional and has somewhat annoying 'clicky' buttons. Controls include bass and treble adjustment, but Bluetooth pairing has to be done via a button on the soundbar's body.

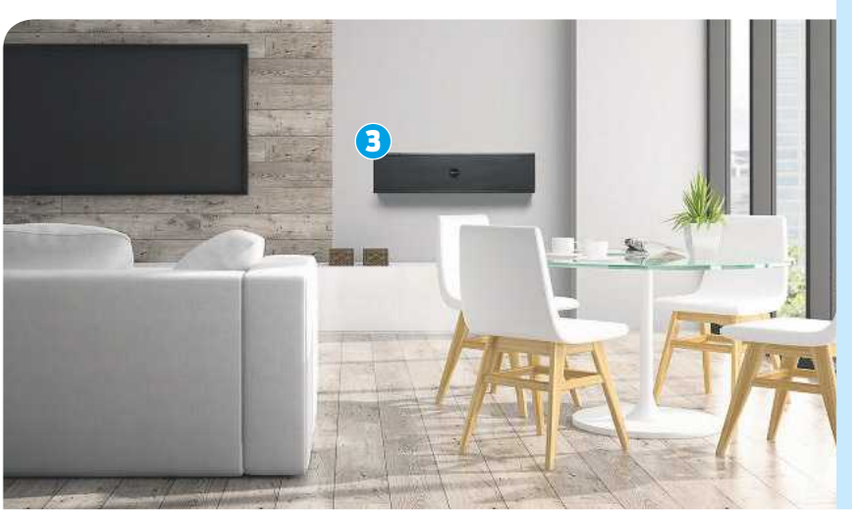
One clever aspect of the One is its ability to be positioned either laid flat (on a TV stand, for instance), or vertically (wall-mounted or maybe on a shelf as a music speaker). This is nothing new, of course, yet the flippable display window is something I've not come across before. The window straddles both the top-right of the One when it's installed horizontally, and the top-left when positioned vertically (you obviously have flipped the 'bar to make sure its central driver is facing up, rather than down). A key press combination on the bar's control panel tells the display window to flip itself, too, so volume/EQ indicators don't look like they're going down when they're actually going up. The Orbitsound logo can also be turned 180 degrees, so the lettering isn't upside down.

This attention to detail for wall-mounters is welcome, but the considerable depth of the One, plus its generally boxy demeanour, perhaps doesn't make it the ideal partner for today's modern, svelte flatscreens.

Sonic spread

So, does airSOUND work? Yes, actually. Parked beneath my TV, the One succeeds in sounding mostly uniform from off-axis positions, its output seeming to trail you around the room, seeping into corners. More importantly, it manages to create a soundscape that's removed from the confines of its cabinet.

Fed the playful soundmix of *Fantastic Beasts and Where to Find Them* (see p106) in PCM via optical input from an Oppo BD deck, the One sounds rather good. The film's >





4

near-incessant orchestral score is crisply defined, with plucky string details and sudden brass stabs. Critically, it doesn't sound like it's emanating from the Orbitsound One at all, instead hanging in space, matching the onscreen action. Certainly helping out here is a second central driver that actually fires upwards (or outwards, if the One is used on its side).

While there's no sense of a sweet spot, you still get to enjoy soundfield pans and image placement. The swirling DTS-HD Master Audio ident on *The Expendables 2* Blu-ray zips around the front soundstage (and, yes, it's all front – there's no virtual rear effect here) and threatens to fly out my living room door. When the film begins and Sly Stallone's armoured vehicles roll through town, there are rumbling wheels shunting left and right. There's a noticeable two-channel effect in play.

The One generally keeps itself together when you raise the volume dial, but I was surprised how easily I hit the end-stop on the LED display. It transpires that, when using the optical input, there's an Optical Volume Boost mode to unlock additional volume steps. Setting this requires going to max volume, and then holding the '+' key for three seconds. Doing this is essential to give yourself more headroom. The setting remains in place unless you reset.

That hidden 5.25in bass driver imparts depth and expands the One's soundstage. Orbitsound rates the frequency response down to 58Hz (-3dB), so don't expect authentic sub-bass thrills. It works reasonably well with hard-hitting movie moments. There are bruising explosions and muffled thuds littering *The Expendables 2*'s opening sequence, and the One digs them out.

At the other end of the frequency range, it's the One's handling of delicate details and crackling FX that really catches the ear. There's a believability to everything from empty shell-casings falling to the floor to something as mundane as Newt Scamander fiddling with the latch on his suitcase. This all works to open up a soundfield and draw you in to a movie. The top-end can sound a bit raw at very high volumes, though.

As for dialogue, voices – both male and female – are certainly well-projected and not overwhelmed by other elements, but exhibited a slightly chesty presentation that I couldn't over-ride. Of course, the tools at your disposal are limited to just bass and treble control – there are no preset EQs to call upon.

Nor is the One the smoothest of listens when it comes to music. Its 2in drivers seem to favour attack and vigour over subtlety, something that is more apparent when you switch out of film mode. This works well at times – the energy of the rocking, rolling metal anthem *Mjød* by Norwegian troupe Kvelertak is head-bangingly infectious, and it sounds good with upbeat, pop-infused fare, too. Yet it can leave you hankering for something with more poise and nuance in the mid-range. When Ed Sheeran croons about driving down those country lanes back home, I don't feel the desperate urge to join him.

That said, I can't see anyone being disappointed with the One's overall delivery on a day-to-day basis.

Spacious presentation

For the money, Orbitsound's One offers a substantial performance, with a particular ear for crisp effects, a spacious presentation and scale-setting bass. It's a strong challenger to key rivals at this price, such as Cambridge's TV5 v2 and Q Acoustics' M3, and offers something a little different. Just remember to unlock that optical volume... ■

SPECIFICATIONS

DRIVE UNITS: 2 x 2in Orbitsound Mk4 side-firing drivers; 2 x 2in Orbitsound Mk4 central drivers; 1 x 5.25in bass driver ***AMPLIFICATION (CLAIMED):*** None given ***CONNECTIONS:*** Optical digital audio input; 3.5mm stereo jack; Bluetooth ***DOLBY TRUEHD/DTS-HD MA:*** No/No ***SEPARATE SUB:*** No ***REMOTE CONTROL:*** Yes ***DIMENSIONS:*** 700(w) x 77(h) x 173(d)mm ***WEIGHT:*** 5.1kg

FEATURES: airSOUND driver/signal processing technology; bass and treble adjustment; dual mounting positions with switchable logo/display; upfiring central driver; 58Hz-17.5kHz claimed frequency response; 180Hz crossover; VESA mount support (bolts supplied)

PARTNER WITH



FANTASTIC BEASTS...: Available in Dolby Atmos on 4K Blu-ray, this big-budget J.K. Rowling fantasy downmixes well to the Orbitsound's stereo driver array. Image quality is also spellbinding – see p106 for more.

HCC VERDICT ★★★★½

Orbitsound One P70

→ £300 → www.orbitsound.com

WE SAY: A fine addition to the Orbitsound stable, able to give movie soundtracks depth, dimension and tangible impact. The remote's a little fiddly and the case-work isn't exactly slender.



5

4. The are on-body keys for power, source, volume and Bluetooth pairing

5. Additional white and wood finishes are due soon

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Mark Craven HCC March 2017

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Revamped Shield is still streaming king

While changes over Nvidia's first-generation Android set-top box are slight, that doesn't make this new design any less impressive. **Rik Henderson** enjoys playing media mogul

IF YOU OWN a 4K HDR television you can be forgiven for wondering why you'd need a separate media streamer these days. The vast majority of 4K TVs have both Netflix and Amazon Video apps, both providing Ultra HD content, typically with HDR. Who then needs another box doing roughly the same?

In a lot of cases I'd agree with that. Separate streaming set-top boxes are generally for those who can't access major online TV and movie services. However, the Nvidia Shield TV is not like other standalone devices. It does many things a TV cannot, smart or otherwise.

For a start, it's among the most powerful streamers on the market. At £190, it's also one of the most expensive. But it justifies that price tag because it's no mere portal for Netflix, Amazon and BBC iPlayer. It's also a fully-fledged Plex media server and a decent games console to boot.

The latter is thanks to its processor – a built-in Nvidia Tegra X1 chipset, which also drives the Nintendo Switch, no less. It has 3GB of RAM so is more than capable with Android games and a range of titles that are specifically developed for the machine. Big titles too, such as *Tomb Raider*, *Portal* and *Half-Life 2*. These run natively and exclusively on the Shield, and its gaming prowess doesn't end there. Nvidia's own cloud gaming service, GeForce Now, is also available, which offers PC games running on remotely-located, high-end, GTX 1080-powered hardware and streamed to the Shield over the internet in up to 1080p at 60 frames per second.

And should you own your own gaming PC with a powerful Nvidia graphics card you can even stream a large selection of your games to the box in up to 4K 60fps. That gives you the option of playing games in a living room from a PC in a bedroom, for example, all streamed over your home network.

The Shield TV comes with its own joypad, as part of a bundle that also includes a Bluetooth remote control. The last-generation Shield (launched in 2015, but firmware updated since then) only came with a games controller, so that's an added bonus this time around.

4K in a box

It's not all games, though. AV enthusiasts will welcome much of the 2017 Shield TV's specifications. The HDMI port on the rear is v2.0b, supporting HDCP 2.2. As mentioned, it can therefore cope with 4K/60p video with HDR, plus Dolby Atmos and DTS:X.

Hi-res audio is supported up to 24-bit/192kHz. That's through HDMI or USB, the latter of which is provided via

AV INFO

PRODUCT:
Android-powered media streaming box

POSITION:
Nvidia's only mass-market home entertainment machine

PEERS:
Apple TV;
Roku 3;
Amazon Fire TV

two 3.0 ports on the rear. These can also be used to hook up a USB memory stick or external drive to expand the storage, which could be essential if you do fancy building a Plex server out of the standard model as it only comes with 16GB. (A 500GB Pro version is available for £280, but you'd be better buying the normal version and a decent USB 3.0 HDD – it'd be cheaper for sure and you won't notice any difference in data transfer or playback speeds).

> 'The Shield TV considers AV fans and more casual users in equal measure, and is super-slick in operation'

Connection to your home network can be done through a Gigabit Ethernet port or over Wi-Fi. The Shield is compatible with 802.11ac networks and is dual-band (2.4GHz and 5GHz) but you're recommended to hardwire if you fancy playing 4K footage.

The box is powered by Android 7.0 (Nougat), the latest version of the operating system for television use. It's fast and responsive in operation, but while there is a stack of apps and games available, there are many holes, too. ITV Hub, All 4 and My5 (previously known as Demand 5) are not offered here.

To counteract this, the Android OS ensures that the Shield doubles as a Chromecast device. You can use your phone or tablet – even Apple iOS models – to start streams from apps not natively available on the box, including all of the missing terrestrial TV catch-up services. And as the Chromecast functionality streams content from the 'net, only using your phone as the instigator, you're free to use your handset as you choose after starting a show.

There are plenty of other apps available on Google Play, with the aforementioned Plex being a particular fave. Kodi home media centre software, formerly known as XBMC, is present also.

Taking aim at Fire

The Shield is the first media streamer that offers Amazon Prime shows in HDR – not even the Amazon Fire TV does that. Sadly, Netflix content isn't in Dolby Vision at present, just HDR 10, but we suspect that will change in time – it's more likely up to Netflix than Nvidia as to when.

One feature we know is coming is Google Assistant. Google's own voice AI will bring with it the ability to control your smart lighting and other connected devices around the home, all from the Shield. All you'll have to do is say 'OK Google' and your commands will be picked up by the game controller, which has a built-in microphone. Nvidia did consider putting the mic in the box itself but chose not to as some users might hide it in an AV cabinet. And the slim remote control might also be hidden away or lost down the sofa. The gamepad was the only device likely to be left out.

For Google Assistant to work, the controller will need to be listening at all times. This will surely affect battery life, but that's something that will only become apparent when the update happens.

The 2015 model of Nvidia Shield TV won't be given a Google Assistant makeover, so this is a differentiator for the newer version. Other than that they are almost identical – the latest box is smaller, but runs on the same processor and other internal gubbins. They have the exact same software too, since a recent update. Is an upgrade necessary if you bought the first-generation device? Well, the game controller is a better, more comfortable shape, and the new remote control runs on a cell battery rather than a rechargeable one, which means you don't have to charge it every month, but the overall experience really is no different.





2

The slickest around

The Shield TV is an excellent piece of kit. It considers AV fans and more casual users in equal measure, with a mighty supported codec list and the playback nous to back it up. It's also slicker in operation than any Smart TV I've used, including 2017 lines.

A video playing monster with gaming the icing on the cake, it's pricey but worth it for those who care about what they feed into their system ■

SPECIFICATIONS

CONNECTIONS: 1 x HDMI output (v2.0b with HDCP 2.2); 2 x USB 3.0 ports; Gigabit Ethernet ***HARDWARE:*** Nvidia Tegra X1 processor; 3GB RAM; 16GB storage
APPS (MAIN): Netflix; Amazon Video; BBC iPlayer; Plex; Google Play
DIMENSIONS: 159(w) x 25.93(d) x 98(h) mm ***WEIGHT:*** 250g

FEATURES: Bluetooth 4.1; 802.11ac Wi-Fi (2.4GHz/5GHz); supplied with Bluetooth remote and games controller; Dolby Atmos and DTS:X support, 24-bit/192kHz hi-res audio playback; up to 4K/60p video; MKV, DivX, XviD, HEVC, H.263, H.264, H.265 video supported; FLAC, MP3, AAC, PCM, WMA audio supported; Android 7.0 (Nougat) OS; HDR playback

PARTNER WITH



SHIELD VERTICAL STAND: Okay, you don't need to stand the Nvidia Shield upright for it to work, but the company appreciates that some like to give their hardware a more menacing look. This weighted, non-slip £20 accessory will do the job.

1. **The new Shield's casework is around 40 per cent smaller than the original**

2. **Premium gaming, via the GeForce service, remains part of the appeal**

HCC VERDICT ★★★★½

Nvidia Shield TV (2017)
→ £180 → www.nvidia.co.uk

WE SAY: Expensive but justifiably so, the Nvidia Shield TV is the most powerful consumer media streamer on the market. A fast, user-friendly mix of gaming, 4K HDR video and more.



Speed demon PJ brings joy to gaming

John Archer fires up his collection of consoles to make the most of BenQ's game-friendly projector – but can it also deliver the goods with Blu-ray?

AV INFO

PRODUCT:
Gaming-focused Full HD DLP projector

POSITION:
Around the middle of BenQ's home entertainment range

PEERS:
BenQ TH530; Optoma GT1080; Epson EH-TW5350

WHILE MOST PROJECTORS we review in *HCC* are focused on cinematic playback first and video gaming second, BenQ's W1210ST switches things around – and does so with startlingly effective results.

The first signs of its gaming-centric nature appear as soon as you set it up. Simple zoom and focus wheels behind a top-mounted flap mean you can get it working in moments, and its short-throw lens means you can get, for instance, a 100in image with the projector just 1.5m from your screen. This is obviously ideal for bedrooms or games dens, or placement upon a coffee table in a cosy living room. There's a decent amount (1.2x) of optical zoom, too, affording some flexibility.

Advertising the W1210ST's gaming focus is the presence of a Game picture preset that's designed to minimise the projector's input lag (the time it takes to render received image data). Choosing this in conjunction with an additional Fast Mode delivers a brilliantly game-friendly input lag measurement of under 15ms. This is the lowest figure I've seen on a projector.

The only setup disappointment is the lack of any vertical image shifting, leaving you likely having to use image-distorting keystone correction to get the image's edges straight, or arriving at an ungainly solution involving stacks of *Yellow Pages*.

While the W1210ST is bigger than your average affordable projector (it's 38cm wide and 27cm deep), it still looks pretty neat. There's glossy white bodywork with silver highlights and a natty red ring around both lens and keypad. Connections are plentiful enough too, with two HDMI inputs, 12V trigger and RS232 terminals, and audio jacks feeding a hopefully powerful 2 x 10W

integrated sound system. Naturally, there's also a PC VGA input.

The W1210ST can be partnered with BenQ's WDP02 Wireless HD add-on for cable-free operation. I suspect, though, that most people will be deterred by this kit's £325 cost. This wasn't tested here.

On the Horizon

The projector delivers on its gaming promise. Exploring the beautiful wilds of *Horizon Zero Dawn* delivers a fluid, natural look to pans around the landscape with no double imaging

> 'The Full HD pixel count makes the crispest Xbox One and PS4 games look pin-sharp and clean'

or blurring. The picture responds quickly to your movements, too, providing a sense of immediacy superior to the typical bigscreen experience.

I also loved the sense of speed combined with precision control I got while hurtling around the roads and fields of Australia in *Forza Horizon 3*. The image retains its clarity and immediacy when you're barrelling into it rather than panning around it, and there's none of that 'glue on the tires' feel you get with less responsive PJs.

The W1210ST's Full HD pixel count makes the crispest Xbox One and PS4 games look pin-sharp and clean, and even the PJ's contrast – usually a weakness for sub-£1,000 models – does well enough to handle dark gaming moments such as *Gears Of War 4*'s torchlit scenes without crushing out subtle details or hiding them with greyness.

Great though the W1210ST is for gaming, it's also an effective movie projector. The Cinema mode serves up Blu-rays rich in contrast (if you use the Smart Eco setting with brightness up a point or two from its default), while colour and detailing are also both strong. Even notoriously tricky segments, like those in the alien 'visiting room' in *Arrival*, appear credible.

Motion handling is good, with a natural feel, and although colours feel slightly more biased towards gaming tones than movie ones, they're still full of the subtle tonal details that separate video from gaming graphics.

SPECIFICATIONS

3D: Yes. Active (3D glasses optional) ***4K:*** No. 1,920 x 1,080 resolution ***HDR:*** No ***CONNECTIONS:*** 2 x HDMI inputs; 12V trigger; 3.5mm audio loopthrough; VGA port; RS232 ***BRIGHTNESS (CLAIMED):*** 2,200 ANSI Lumens ***CONTRAST RATIO (CLAIMED):*** 15,000:1 ***ZOOM:*** 1.2x (manual) ***DIMENSIONS:*** 380.5(w) x 121.7(h) x 277(d)mm ***WEIGHT:*** 3.6kg

FEATURES: Game preset and 'fast' mode for low-latency gaming; Brilliant Colour system; Multiple lamp modes include Smart Eco for best picture/low energy consumption; short-throw lens (0.69-0.83:1); vertical keystone correction (+/-20 degrees); optional Wireless HD kit; ISF calibration; Bright, Vivid, Cinema, User, ISF Night, ISF Day and 3D picture modes

PARTNER WITH



SONY PLAYSTATION 4: The HDR and 4K skills of Sony's latest console (£350) will sit on the back-burner with this projector, but it's still a beast of a gaming machine buoyed by a relentless stream of A-grade titles.

Although 3D-capable, the projector doesn't ship with any glasses, so these are an additional cost. And its 3D images look a little dark.

Elsewhere, stand-out bright picture elements occasionally generate the 'rainbow effect', where coloured stripes flit momentarily over the picture. Blu-ray images sometimes look noisier than they might on a more video-focused projector. Finally, the speaker system doesn't prove as powerful as desired, quickly becoming muddy and distorted when pushed loud.

Make no mistake, though: if you're a serious gamer looking to take things to the next level while also enjoying the occasional bigscreen movie night, the W1210ST is at the top of the leaderboard ■

HCC VERDICT ★★★★½

BenQ W1210ST

→ £950 → www.benq.co.uk

WE SAY: BenQ's cool-looking Full HD projector transforms your gaming experience while also being no slacker when it comes to movies. Short throw suits casual setups.



1. **As a short-throw model, the W1210ST suits table-top installation**

2. **The audio input is married to a 2 x 10W speaker system**

A step too far

4K and HDR picture playback isn't the sole preserve of super-size TVs. But this entry-level 43in model, says **John Archer**, isn't the best advert for the technology



SPECIFICATIONS

3D: No ***4K:*** Yes. 3,840 x 2,160 ***HDR:*** Yes. HDR 10 ***TUNER:*** Yes. Freeview HD ***CONNECTIONS:*** 4 x HDMI inputs; 3 x USB; Scart; optical digital audio output; component video; headphone; Ethernet ***SOUND (CLAIMED)***: 20W ***BRIGHTNESS (CLAIMED):*** N/A ***CONTRAST RATIO (CLAIMED):*** N/A ***DIMENSIONS (OFF STAND):*** 970(w) x 576(h) x 80(d)mm ***WEIGHT (OFF STAND):*** 9.4kg

FEATURES: Wi-Fi; USB and DLNA multimedia playback; Pixel Precise processing; Android TV smart system; Google Cast support

The PUS6401 supports the HDR 10 format from Ultra HD Blu-ray

WHILE PHILIPS IS busy turning AV fans' heads with its OLED TVs, it's also targeting bargain hunters with the 43in 43PUS6401.

Despite this set's £450 price, its screen squeezes in a 4K pixel count. It also supports high dynamic range (in HDR 10 format) via (some of) its four HDMI sockets; carries the Android TV smart platform; and even enlivens its otherwise minimalistic grey design with a two-sided (left and right) version of Philips' Ambilight technology.

Unfortunately, though, this is where the good news largely ends. The 43PUS6401 delivers practically no black level response at all, for instance. Dark scenes in HDR mode appear through a potent grey/blue wash as the set's backlight controls turn out to be wholly unequal to the HDR task.

The situation isn't helped, either, by small but clear jets of light that creep into the picture from the screen's two bottom corners when trying to deal with high-contrast shots such as those showing the white 'wall' that sits at the end of the dark alien tunnel in *Arrival* (4K Blu-ray).

Since the 43PUS6401 sports no local dimming, contrasty HDR shots do at least appear free of light bands appearing around stand-out bright objects. But frankly I'd have taken a bit of banding in place of the general drab greyness.

The TV doesn't just fail to deliver the dark end of HDR's extended light range either. There's also no real sense of extra punch in the bright 'highlights' of HDR content. The spotlights and holographic computer images of the *Pacific Rim* Ultra HD Blu-ray lack zing.

That disc's vivid colours are blighted, too, by the greyness that washes over the whole picture and a rather over-ripe look to rich HDR colour tones. To top it all off, even though there's only the slightest increase in peak brightness with HDR, the brightest parts of HDR pictures clearly 'clip' out detail, leaving them looking like white holes in the image rather than natural parts of it.

On balance...

It is possible to hunt out good things about the 43PUS6401's pictures. HDR content enjoys a sensible balance between light and dark areas, the latter avoiding looking too dominant and devoid of detail.

And the screen gets good impact from its 4K resolution – especially in largescale shots of cities or crowds of people, or in extreme close-ups. Even at this size, UHD detail is clear.

Sharpness reduces somewhat when there's motion in the frame, but you can tackle this – at the expense of making the action look a bit *too* slick – by using the set's Natural Motion processing.

The Philips also upscales HD sources to 4K more convincingly than many budget 4K TVs, with palpable extra detail and reasonable suppression of source noise. Standard dynamic range images found on HD Blu-rays and broadcasts deliver more convincing colours and slightly more credible black levels than you get with HDR, too.

But these small victories shouldn't persuade you that the 43PUS6401 is any sort of picture quality hero. Philips' notch-up PUS6501 TVs [see *HCC* #271] perform better than this set does, while Samsung's (admittedly £350 dearer) UE43KS7500 [see *HCC* #269] is in a whole other performance league.

A lack of bass and mid-range dynamics means that when the going gets tough, the TV's sound becomes harsh and lacking in treble detail. Add to this – and those picture woes – various problems associated with the Android-based user interface, such as its cumbersome layout and lack of the ITV Player, All4 and My5 catch-up TV services, and you've got a TV that's only worth considering if price, size and specification are your key drivers ■

AV INFO

PRODUCT: 43in 4K/HDR TV with Android

POSITION: Not surprisingly given its price, it sits at the bottom of Philips' 4K range

PEERS: Philips 43PUS6501; Samsung 43KS7500

HCC VERDICT ★★½☆☆

Philips 43PUS6401

→ £450 → www.philips.co.uk

WE SAY: It's affordable and looks nice thanks to Ambilight, but it's hard to find much more that's attractive about the 43PUS6401.

"astonishing sound and visuals"

says the homeowner of this 4K home cinema/ gaming room with Dolby Atmos 7.2.4







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Adrenalin junkie

This bargain-priced seven-channel receiver may miss out on some new tricks but that doesn't stop **Danny Phillips** enjoying its approach to BD soundtracks

HOME CINEMA Choice RECOMMENDED



SPECIFICATIONS

DOLBY ATMOS: Yes ***DTS:X:*** Yes ***THX:*** No ***MULTICHANNEL INPUT:*** No ***MULTICHANNEL OUTPUT (CLAIMED):*** 7 x 80W ***MULTIROOM:*** Yes. Zone 2 ***AV INPUTS:*** 4 x composite; 3 x digital audio (1 x optical and 2 x coaxial); 3 x analogue audio ***HDMI:*** 4 x inputs; 1 x output ***VIDEO UPSCALING:*** Yes. To 4K ***DIMENSIONS:*** 435(w) x 161(h) x 327(d)mm ***WEIGHT:*** 8.1kg

ALSO FEATURING: Cinema DSP 3D; YPAO EQ; Virtual Presence Speaker; Dialogue Lift; dual subwoofer outputs; DSD, FLAC, WAV, AIFF, ALAC; Wi-Fi; Bluetooth; MusicCast; Spotify, Qobuz, Juke and Napster streaming

The RX-V581 supports 5.2.2 Dolby Atmos, DTS:X and a host of DSP modes

THE RELENTLESS TURNOVER of AV receivers means there are plenty of bargains to be had if you're willing to explore a company's back-catalogue and sacrifice a few mod cons.

Case in point: this midrange Dolby Atmos-ready gem from Yamaha's 2016 range, for which a replacement (due in June) has just been announced. The RX-V581 may lack the Dolby Vision and HLG support of its RX-V583 successor, plus integrated Tidal and Deezer clients, but it remains well-featured for an affordable AVR. And affordable it certainly is – freely available now for around £350, maybe even a little less if you look around.

Looks familiar

It's a seven-channel model, with an overall styling that is never going out of fashion. Jet-black chassis, clean lines and plenty of buttons to play with, this is textbook Yamaha.

Connections cover the essentials but stop short of extravagance – a phono stage and second HDMI output are reserved for the step-up RX-V681 and 781. But the four HDMI inputs and single output all support 4K, HDR (10) and HDCP 2.2, while optical, coaxial and AV inputs cater for other sources.

The receiver can feed dual subwoofers, while Ethernet and Wi-Fi are the gateway to MusicCast multiroom, which lets you stream any source to other MusicCast speakers around the house. The MusicCast app brings Spotify, Qobuz, Juke and Napster to the table, as well as DLNA playback from NAS drives and PCs. For hi-res fans, there's gapless playback of FLAC, WAV and AIFF up to 192kHz/24-bit, plus DSD 2.8/5.6MHz and 96kHz/24-bit ALAC.

The seven amp channels can be used to drive Dolby Atmos 5.2.2 and DTS:X. Power output is rated at 80W per channel (into 6 Ohms, stereo, with 0.09%THD). There's a huge selection of CINEMA DSP modes that adapt the sound for different speaker configs.

Using the RX-V581 is a piece of cake. Friendly setup menus are piped to your TV screen via HDMI and delve into every nook and cranny. The remote feels plasticky but has buttons in all the right places. Yamaha's YPAO auto calibration system is quick and reliable, assessing room acoustics using the supplied mic. The levels and distances set in my room appeared accurate.

The MusicCast app is one of the best examples of its genre, with a tidy layout that makes multiroom streaming easy from any source. A second app, AV Controller, is a full remote substitute. This allows you to set the parameters of each of the amp's DSP modes using interactive graphics and graphs. Both apps are great, but would be more convenient merged into one.

AV INFO

PRODUCT: Seven-channel Atmos/DTS:X AV receiver

POSITION: Midrange model from 2016's V81 lineup

PEERS: Pioneer VSX-1131; Denon AVR-X1300W

AVR with aggression

In action the RX-V581 delivers all the firepower I've come to expect from Yamaha receivers. Bite, aggression, muscle – it's all here, even at this modest price point. There's room for a little more finesse and subtlety, but no one can argue with the RX-V581's ability to entertain.

Fire up *Star Trek Beyond*'s Dolby Atmos soundtrack and you're plunged into a maelstrom of swooping spaceships, huge explosions and feisty fight scenes.

The Yamaha is particularly adept at conducting an Atmos soundstage. It effortlessly sends Krall's swarm of bees swirling purposefully overhead and makes the planet Altamid's forests appear vast and towering.

More down-to-earth effects are handled with equal assurance, from Kirk's rasping motorbike engine to Beastie Boys' *Sabotage*, which sounds suitably big and boisterous as it blasts across space.

Switch to *Looper* and the RX-V581 continues to shine. It revels in Rian Johnson's snappy dialogue, shaping the words with body and texture, while Joe's shotgun has a meaty kick. A clear, robust midrange and well-integrated bass give the movie's violence a sense of depth and scale, while remaining controlled.

The feisty presentation can get a little brash, particularly at loud volumes. And when judged against similarly-priced competition, Denon's AVR-X1300W is a smoother and subtler listen, teasing out movie minutiae with greater precision.

I'm still enthusiastic, though. This is a joy to use, bursting with features and wildly entertaining. An improved model is coming down the pipe in a couple of months, but you might find that this does all you need ■

HCC VERDICT ★★★★½

Yamaha RX-V581
→ £350 → uk.yamaha.com

WE SAY: If you can do without its successor's DV support, plus other step-up features, the RX-V581 is a bit of a bargain.

Denon HEOS 5 HS2

This mid-size multiroom speaker gets a sonic upgrade, reports **Steve May**

THIS SECOND-GEN HEOS wireless speaker may look the same as its antecedent, but there are key differences. This high-speed HS2 model now supports hi-res audio, and Bluetooth is integrated.

More processing power allows it to handle a much wider range of file formats, too. Uncompressed WAV, ALAC, AIFF and FLAC up to 24-bit/192kHz, plus DSD 2.8MHz and 5.6MHz, all play.

Of course, it's still interoperable with all other HEOS speakers, both HS2 and original, as well as Denon's HEOS-equipped AV receivers.

Weighty at 3kg, the HEOS 5 HS2 is impressively built and rather sexy. Rear connections are USB, 3.5mm jack and Ethernet. System setup and control via the HEOS app remains unchanged. Wi-Fi is built in.

The speaker is a two-way design, with dual tweeters and woofers powered by a quartet of Class D amp modules. Additionally, there's a passive radiator tucked into the chassis for beefed-up bass.



White and black finishes are available

Performance is perfectly fine. The HEOS 5 HS2 is mildly stereophonic, and will thump boisterously to the beat (a bit more subtlety might be welcome) when required. But the benefit of hi-res audio on this class of speaker is not so much sonic (although DSD files sound remarkably crisp), as convenience. The HEOS ecosystem can now be used with a wide library of file types.

The speaker will play tracks from a NAS or iTunes library, as well as stream services like Tidal, TuneIn and Spotify. It will also receive any other connected HEOS source.

The USB port allows tracks to be played locally, but by grouping speakers the drive can also become a multiroom source.

Overall, this is a welcome upgrade to a solid but not quite spectacular multiroom speaker. Want to throw a DSD house party? ■

HCC VERDICT ★★★★½

Denon HEOS 5 HS2
→ £350 → www.denon.co.uk

WWW.SYNC-ONE2.CO.UK/£230

Sync-One2

Jon Thompson gets to the bottom of lip-sync issues with this idiot-proof accessory

SOME AV DEVICES are simple in ambition and just work. The Sync-One2 is one of them.

This handheld gizmo measures how out of sync the sound and picture in your system are, and that's all. Not interested? I'd say it's worth it if you're after a premium performance, but understand the £230 ticket will put many off.

All devices in a digital chain introduce processing delays. The worst offenders are probably projectors – if you have a PJ it will be introducing a (video) delay of some degree. Most AV processors let you add delay to audio to compensate for that. But what value? You can try and assess by eye, but that's very hit and miss, and if you have early sync that just confuses the brain.

The Sync-One2 carries a mic and light sensor. Turn it on and it calibrates itself to the noise/light level in your room. You then need a test file, available from the Sync-One2 website. Copy this to a memory stick, and put the stick in your UHD or Blu-ray player. This plays a one-frame white flash and a 'pop' sound.



Delay can be measured in milliseconds and frame rate

With the Sync-One2 aimed at the screen from your listening position, and making sure not to cover either sensor with your stubby fingers, it will trigger and measure when the pop and the flash occur and calculate the time delay between them, which is displayed on the device's screen in milliseconds, and – if you've set a frame rate (eg 24fps for Blu-ray movies) – in frames. Now if your system is totally in sync these figures will be '0'. Chances are, they won't be. But if you're faced with, say, a +55ms delay, you know the figure you need to set on your AV processor/receiver. Dial that in and run the test again....

The Sync-One2 is for those who want a perfect AV sync. It gives you the data to fix (but not cure) a problem you might not have been aware of, and works faultlessly. There's nothing more to say! ■

HCC VERDICT ★★★★½

Sync-One2
→ £230 → www.sync-one2.co.uk











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Ultra HD Blu-ray laid bare

Huzzah! Panasonic has shoehorned a premium 4K Blu-ray player into a bargain box, says cheapskate **Steve May**

SPECIFICATIONS

ULTRA HD: Yes ***HDR:*** Yes. HDR 10
UPSCALING: Yes. To 2160p ***MULTIREGION:*** No. Region B BD/R2 DVD ***HDMI:*** 1 x output
MULTICHANNEL ANALOGUE: No
DIGITAL AUDIO OUTPUT: No ***ETHERNET:*** Yes
BUILT IN WI-FI: No ***SACD/DVD-A:*** No
DIMENSIONS: 320(w) x 45(h) x 193(d)mm
WEIGHT: 1.3kg

FEATURES: Dynamic Range Conversion adjustment; adjustable HDR brightness; 2 x USB ports; Panasonic 'Smart' portal with Netflix, Amazon, YouTube, BBC iPlayer; DLNA media playback; 10-bit priority mode



MOST OF US think of 4K Blu-ray as a high-end home cinema option, but the Panasonic DMP-UB300 aims to change all that. Apparently you no longer need to budget big to benefit from glorious UHD.

Admittedly, this £240 player looks brazenly cheap. Compact at just 320mm wide, it junks any notion of a useful display for a Cylon-red power LED, and sacks off superfluous connectivity. Driving it all is a dumpy infra-red remote controller.

The front fascia features a naked USB port, while the rear is restricted to a single HDMI output, USB v3.0 connector and Ethernet. This connection is important, as there's no Wi-Fi onboard. There's no optical or coaxial out, either.

But appearances deceive. This budget box still boasts UHD Premium certification, and employs the same 4:2:2/4:4:4 sub-sampling 4K High Precision Chroma Processor as its UB700 and UB900 siblings. It even adds new tricks in the shape of a Deep Colour 10-bit priority mode. In auto pilot, the player decides the best video output based on the EDID received from the TV, but if you spot colour banding with the 12-bit default, you can manually select 10-bit mode instead.

Usability is unchanged. Once online, Panasonic's portal offers Netflix and Amazon Video (both able to stream in 4K HDR), plus YouTube and BBC iPlayer. The deck will also function as a Media Renderer or network playback device.

The disc loader is no slouch. My go-to movie jumps from tray to menu in 44 seconds, while a music disc does the same in 33 seconds – both perfectly acceptable speeds.

Undiminished appeal

Picture quality is pleasing, with 4K resolution and HDR 10 dynamics undiminished. The UB300 delivers disc to display without a niggle, leaving you to bathe in the clarity and depth of your favourite platters.

Another new feature here is adjustable HDR brightness. Pulled up via a dedicated button on the remote, this allows you to lift HDR when it looks too dark in a brightly-lit room. A standard brightness control won't do the job, as it blows out HDR highlights; this adjustment manages to retain dynamics, boosting the overall picture level. There are Standard, Natural Environment, Light Environment and Bright Environment modes. While Bright takes its toll on the Times Square slugfest in *The Amazing Spider-Man 2*, the Natural preset is surprisingly effective.

If your 4K TV lacks HDR, there's Dynamic Range Conversion, which allows you to tone-map content to best suit your panel, using a sliding manual scale. This shouldn't be over cranked.

There's additional refinement to be had in the Options menu, including manual luma and chroma level adjustment, but I suspect most shoppers of this entry-level deck will just plug in and play.

I've no grumbles about audio playback. Dolby Atmos and DTS:X bitstream with gusto and to maintain some higher semblance of fi, there's am HDMI low-clock jitter processor at play. And while you might expect this bargain spinner to have cloth ears, it does a fine job as a network media player. Panasonic has saved its poshest post-processing for step-up models, but file compatibility is bang on. The UB300 plays DSD 2.8MHz/5.6MHz files, 24-bit/192kHz FLACs, MP3, AAC and WMA.

So the arrival of this squat spinner signifies a growing maturity for the UHD Blu-ray format; expect other affordable decks to appear from rivals. AV performance exceeds build quality, and as a network file player this machine ticks all the right boxes.

The removal of Wi-Fi will confound impulse buyers, and the absence of split audio/video HDMI kills its employment with old (and not so old) AVRs.

I've called it budget, but the £237 list price is a bit toppy given the cost of the Xbox One S. Yet that's certain to tumble. Someone pass the Value popcorn ■

AV INFO

PRODUCT: Affordable 4K Blu-ray player

POSITION: Panasonic's entry-level model

PEERS: Samsung UBD-K8500; LG UP970; Xbox One S

HCC VERDICT ★★★★½

Panasonic DMP-UB300
→ £240 → www.panasonic.co.uk

WE SAY: Compact and utilitarian it may be, but this UHD disc-spinning cheapie doesn't disappoint when it comes to video playback.


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Carrying the cans

Ed Selley enjoys the premium performance from B&W's premium headphones – even if he's not sure they're suited to taking out and about



A second 5m home cable is also supplied

AS ONE OF the early arrivals in the influx of speaker brands into the headphone market, Bowers & Wilkins has carved itself a niche. A manufacturer lauded for its loudspeakers has become a manufacturer lauded for its headphones.

Its latest offering, the P9 Signature, are priced at £700, and are the current top dog in B&W's headphone range, above the P7 models. Like their stablemates, the P9s are designed to be used both at home and on the move, with in-line cable controls (but no Bluetooth connectivity or noise-cancelling). Yet they are pretty large judged by the standards of a portable. In fact, I'd say they are simply too large to wear out in public, unless you like being stared at.

The P9s are a full-size over-ear design built around a pair of 40mm drivers, which are constructed from an unspecified material, albeit one that B&W says is 'nylon damped'. A design aspect of the drivers is that they are angled at fifteen degrees from completely flat. This is to aid the sense of a stereo image coming from slightly in front of you.

The enclosures themselves are closed-back. A Finite Element Analysis (FEA) process – as B&W uses on its full-size speakers – has been employed to engineer the chambers and create an 'optimised acoustic environment.'

The padding for the housings is removable and behind the left-hand one is a cable terminal that allows you to change between a short cable with mic and remote, and a much longer one (5m) for home use.

Bigger brother

The overall design looks like a scaled-up version of the P7s. The brushed steel and brown leather finish is smart in a retro sort of way. Build quality appears substantial, as you'd expect given the relatively hefty asking price. And care has been taken to make them wonderfully comfortable.

AV INFO

PRODUCT: Closed-back over-ear headphones

POSITION: These are currently B&W's priciest models

PEERS: Oppo PM-2; AudioQuest NightOwl

SPECIFICATIONS

DRIVERS: 2 x 40mm full-range drivers
DESIGN: Closed-back, over-ear
FREQUENCE RESPONSE (CLAIMED): 2Hz-30kHz
SENSITIVITY (CLAIMED): 111dB
NOISE CANCELLING: No ***BLUETOOTH:*** No
IN-LINE CONTROL: Yes, plus microphone
WEIGHT: 415g

FEATURES: Nominal impedance of 22 Ohms; 1.2m and 5m cables provided; folding hinged design; changeable ear cushions; angled drive design; supplied with Alcantara carry case; Saffiano leather headband and earcups

Impressive sensitivity means the P9s can be easily driven off a portable device even if you don't leave the house. Watching my Digital Copy of *Rush*, they combine tangible low-end weight with a spaciousness and delicacy that makes listening at high levels very pleasurable. The final race at Fuji is handled brilliantly, with the various mechanical noises from the cars, and the water flowing over them, being a series of distinct sounds woven into an all-round sonic tapestry. Commentators and score are perfectly audible but never overwhelm the main event. Most importantly, the performance is big and expansive enough to make you forget that you are wearing headphones and concentrate on the movie.

There is a definite perception of the angled drivers in the P9s' presentation. Onscreen events emanate from in front of you in a 180-degree arc, with a degree of movement behind from left and right. With music, this trick is generally less pronounced, and you'd be hard-pressed to determine that the drivers weren't mounted conventionally. This is not to say that music doesn't sound good. A healthy blast of Ibibio Sound Machine's *Uyai* (via Tidal) shows that the B&Ws have plenty of energy balanced against a detailed midrange that finds the nuances and subtleties in vocals and instrumentation. Only a slightly dominating low-end can be said to count against them.

In all, there's plenty to like here. Whether the P9s would have been even better if B&W had dispensed with the portable features (Alcantara carry case, folding design, closed-back cups, high sensitivity) depends on how likely you are to take these full-size 'phones out on your travels. I'd be happy to keep them in my listening room ■

HCC VERDICT ★★★★½

B&W P9 Signature
→ £700 → www.bowers-wilkins.co.uk

WE SAY: Large for a portable design but the P9s remain comfy, pretty and – importantly – have a sound performance that feels worthy of the price.

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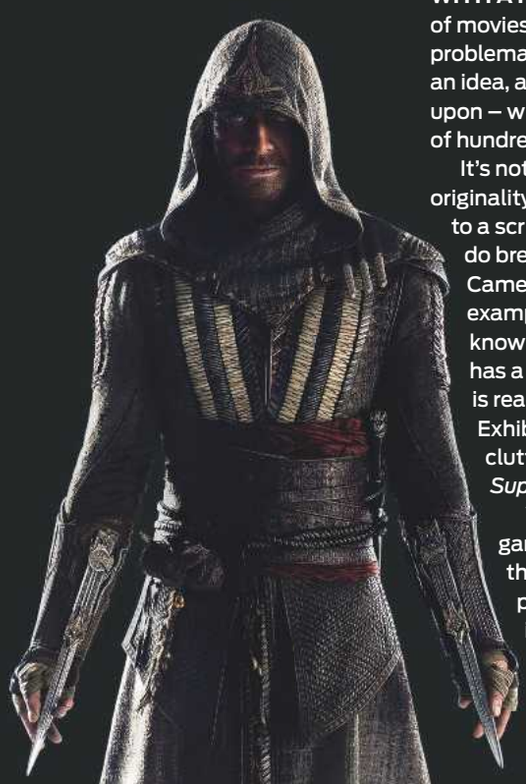
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PRESS ANY KEY...

Assassin's Creed is the latest hit videogame to be reimagined by Hollywood for the bigscreen. **Mark Craven** looks at the hits and misses of this cinematic sideline, beginning with Bob Hoskins wearing dungarees...



WITH A FILM industry cranking out hundreds of movies a year, finding new stories to tell can be problematic. Someone, somewhere, needs to have an idea, and then that idea has to be gambled upon – with bets sometimes running to the tune of hundreds of millions of dollars.

It's not a surprise, then, to discover that total originality isn't always the key thing when it comes to a script getting the green light. Fresh concepts do break big at the box office – James Cameron's *Avatar* being the most obvious example – but studio execs are comforted by knowing that a potential production already has a fanbase familiar with the material, and is ready and waiting to pre-order a cinema seat. Exhibit A: the number of sequels and reboots cluttering up multiplexes. Exhibit B: 1993's *Super Mario Bros.* movie...

Yes, that's right. The first computer-game-to-movie adaptation followed the exploits of a pair of Italian American plumbers battling dinosaur descendants in another dimension. Perhaps if that had been a story outline knocked up from scratch, it wouldn't have got past the first draft, but the *Super Mario Bros* game series, from Japanese developer Nintendo, was simply huge in the early 1990s. Huge enough to birth a movie with a $50m budget, Dennis Hopper and Bob Hoskins amongst the cast, and a Summer release date.

The movie itself – available on UK Blu-ray since 2014 via Second Sight and more recently in a Zavvi-exclusive Steelbook – was a damp squib that even Mario couldn't have fixed. Critics hated it. The people starring in it hated it. And audiences also hated it, ensuring a box office belly-flop that meant it failed to recoup its production costs. But was *Super Mario Bros.* the end of the notion of turning popular videogames into movies? No. The floodgates were open. And things were about to get fighty.

Apart from jumping up and down, collecting coins and bouncing off Goombas in Mario's Mushroom Kingdom, the other thing that early '90s gamers really liked doing was beating people up. The failed Mario movie was therefore quickly followed by a trio of fisticuff features – *Double Dragon* (1994), *Street Fighter* (1994) and *Mortal*



Whatever the game genre, Hollywood will make it over for the cinema screen







Film versions of *Mortal Kombat* (top), *Silent Hill* (middle) and *Resident Evil* (bottom) all enjoyed box office success

Kombat (1995). The latter two, by building movies around games where plot was secondary (or even nonexistent) but action was king, found success where Mario hadn't. Why try to turn the fantasy elements of a platform game into a believable story when you could simply add a basic narrative to a two-player beat-'em up?

Mortal Kombat cleared more than $100m in ticket sales, holding its own in a Summer of *Batman Forever*, *Die Hard With a Vengeance* and *Apollo 13*. It also made its young British director Paul WS Anderson a Hollywood player (more on him later), and made sure that videogame movies were here to stay.

Welcome one, welcome all

In the following twenty-odd years, games houses from Bandai to Ubisoft have licensed their titles to film studios seeking to follow *Mortal Kombat's* lead. First-person shooters (*Doom*), sci-fi simulators (*Wing Commander*), puzzlers (*Tomb Raider*), fantasy epics (*Prince of Persia*), racing titles (*Need for Speed*) and even touchscreen timewasters (*Angry Birds*) have all been deemed ripe for a celluloid conversion. But many have simply not lived up to their potential. Many – let's be honest – have sucked.

Serial bad movie-maker Uwe Boll can shoulder a lot of the blame, taking the *House of the Dead*, >



Win! Assassin's Creed on Blu-ray!

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Assassin's Creed arrives on Digital Download on April 28, and on 4K Ultra HD, 3D Blu-ray™, Blu-ray™ and DVD on May 15, courtesy of Twentieth Century Fox Home Entertainment. To be in with a chance of grabbing a copy on Blu-ray (complete with 7.1 DTS-HD audio and a host of extras) answer the following...

Question:

Assassin's Creed star Michael Fassbender plays android David in which sci-fi movie?

Answer:

A) *I, Robot* **B)** *Rogue One: A Star Wars Story* **C)** *Prometheus*

Email your answer with 'Assassin' as the subject heading – and don't forget to include your postal address! See p86 for full terms and conditions



Microsoft's *Halo* franchise: almost a big-budget movie produced by Peter Jackson

Game on!

The best, and worst, videogame adaptations

▲ Resident Evil: Afterlife



The return of Paul WS Anderson to the *Resident Evil* franchise after a two-film break, plus some thrillingly creative use of 3D, ensures this zombie sequel is worth a spin.

▲ Warcraft: The Beginning

Duncan Jones (*Moon*, *Source Code*) takes the insanely popular MMORPG title and builds a character-rich fantasy epic that's better than you might expect.

▲ Mortal Kombat

Finish him! Midway Games' tournament beat-'em up proves fertile ground for an enjoyable, action-packed popcorn muncher.

▼ In the Name of The King



This Jason Statham sword-n-sorcery outing is perhaps the best effort from hack director Uwe Boll, but that still doesn't make it easy to recommend.

▼ Mortal Kombat: Annihilation

While there's plenty of action in this quickly turned around sequel, there's a lack of any semblance of a plot or characters worth caring about. One sequel too many.

▼ Max Payne

Mark Wahlberg takes on the role of Remedy Entertainment's ex-cop vigilante in what transpires to be a drab, humourless exercise in neo-noir filmmaking. Press ESC.

BloodRayne (starring Ben Kingsley, oddly), *Alone in the Dark* and *Postal* titles and unleashing a series of cinematic horrors in the mid-2000s. None of these are worthy of space on your disc shelf – with these, it's a case of stick to the game.

But singling out Boll's low-budget travesties lets other projects off the hook. Sequel *Lara Croft – Tomb Raider: The Cradle of Life* took any good sentiment left over from the first series entry and sealed it up in an ancient burial chamber, while *Prince of Persia* unsuccessfully tried to turn Jake Gyllenhaal into a beefed-up action hero. Mark Wahlberg, an actor more natural with gun in hand, trudged through the wearisome *Max Payne*.

So what have been the game-to-movie success stories? While offering gentle applause to *Mortal Kombat*, *Silent Hill* and *Need for Speed*, it's hard to look beyond the *Resident Evil* franchise, based on Capcom's terror-strewn survival series. The first movie, which shared the game's title, arrived in 2002 and saw director Paul WS Anderson and star Milla Jovovich combine to deliver an action-packed, quick-paced zombie flick. Crucially, it shared enough of the traits of the videogame to make it a worthwhile and fan-pleasing adaptation. Five sequels have followed, including the demo-worthy 3D frightfest *Resident Evil: Afterlife* in 2010, and this year's *Resident Evil: The Final Chapter*, which has amassed over $300m worldwide from a rumoured $40m budget. So perhaps it won't be the final chapter after all.

Such box office joy has been mirrored by two other recent game makeovers – *Warcraft* and *Assassin's Creed*. It will have helped that these two titles are giants of the gaming world, and enjoyed serious financial backing from studios that have realised that big is best when it comes to coaxing joystick junkies out of their console den.

Warcraft is one of those cinematic rarities – a supposed flop that has gone on to coin nearly half-a-billion dollars, thanks in part to huge audiences in China. It seems the language of gaming crosses all boundaries. A film that's hated by some and loved by others, it's available on an Ultra HD Blu-ray that manages to somehow look worse than its 1080p counterpart.

Assassin's Creed, meanwhile, mines the popular stealth-killing, historical fantasy series for its big-budget theatrics, aided by an A-grade cast including Michael Fassbender, Jeremy Irons and Marion Cotillard.

Shine a light

Despite these successes, there's yet to be a genuine hit movie derived from a videogame. It can't help that those who own the rights can sometimes get cold feet. Anyone who ever picked up an Xbox controller in the last decade will have blasted away on Microsoft's sci-fi shooter *Halo*, and the game was once set to be a major movie produced by Peter Jackson, with his WETA Digital FX house handling the CG visuals. Yet disagreements between Microsoft and studios 20th Century Fox and Universal (a joint production deal was in place with split distribution rights) resulted in the project being tagged 'game over'.

One apparent issue around the *Halo* project is that Microsoft, naturally, sought to keep creative control over its prize asset, wary of the knock-on effect that a weak film could have on game sales and the reputation of a franchise that even a decade ago was worth billions. Such fears are no doubt keeping the likes of other fan-favourite titles (*Call of Duty*, *Splinter Cell*, *Grand Theft Auto*) away from theatres.

And maybe the biggest reason for the generally poor reception to videogame movies is that Hollywood is adept at making movies that feel like they could be a videogame, but actually aren't.

The Matrix is a prime example. This sci-fi till-ringer, released in 1999 during the internet's early boom, couldn't feel more like a computer game if it tried. Agent Smith is basically the end-of-level boss that keeps reappearing, Neo is the character you get to play as, and the fabled bullet-time effects are there to replicate the slow-mo gameplay of a poor-quality late-90s 'net connection. Possibly.

Meanwhile, first-person shooters often come across as an homage to James Cameron's *Aliens*, numerous racing games owe a debt to Roger Corman's *Death Race 2000*, and the scary noises and jump scares of horror games are ripped straight from the Hollywood rulebook.

So, while the movie world may sometimes want to turn to videogames for ideas, many of those ideas it's already had... ■

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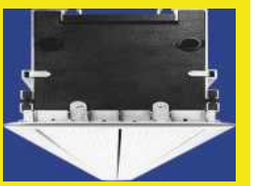
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Digital Copy

Worried about the state of his bank balance, **Mark Craven** is counting the cost of having streaming subscriptions and an expanding Blu-ray collection

ALL HOME CINEMA enthusiasts have two constant concerns. The first: is there anything in my system that needs upgrading? The second: what should I watch today?

Now, the answer to the first is often 'not right now.' Despite the continual flow of new TVs, projectors, players, amps, speakers and other widgets (motion actuators for your sofa!) coming to market, the need to upgrade is only really paramount if something in your setup has broken down irreparably. More likely, upgrades come because you've got something new and all your other kit now won't work with it. And you only bought something new because you wanted an improved performance. So it's your own fault.

Software, though... this can't be ignored. No one wants to watch the same movies on repeat – even my colleague The Beek has moved on from *Friday 13th* marathons. Money therefore has to be found every week/month to satiate the hunger of your home cinema (after all, that's why you bought two ridiculously large subwoofers, and threw out the dining table, in the first place). But how much money, though? How much does it cost to feed a home cinema habit?

A gentle price hike

I started thinking about this because my Netflix subscription went up. By a whopping, erm, £1.50 a month (it should have been more, but Netflix decided to remove my 4K sub at the same time – a story for another day). Anyway, I tallied the Netflix cost of around £100 a year, and began looking at where else I'm throwing money in pursuit of televisual and cinematic entertainment.

Unsurprisingly, I quickly realised that all my subscriptions add up to a hefty amount. Netflix plus Sky plus a TV licence (I'm not a criminal) plus Spotify – cash flies out of my bank account regardless of whether I actually sit down and watch/listen to anything. I'm sure I'm not alone in feeling a bit torn about this. Having unlimited access to practically every song ever released is, on one hand, something so immensely cool that spending £120 a year for the privilege seems like a steal. On the other hand, it just makes me spend even more money than I used to on CDs.

And so we arrive at physical media. **Blu-rays are the bread and butter of home cinema, and this is where our wallets really take a pounding**. At *HCC* we're in the incredibly lucky position of being sent pre-release 'check discs' of some movies for free, but I still manage to find myself going click-happy on payday. And I know from conversations on the *HCC* Facebook page that many of you pick up titles on release day.

Then we get to the question of whether they're well priced. Flicking back through old copies of *HCC* I found LaserDisc releases at £35. And this was in 1997. That doesn't make the typical £20 cost of a fresh Ultra HD Blu-ray release seem that bad – until you find four or five a month you want to buy. And prices do vary. For every time you manage to pick up two for £25 somewhere, you're asked to pay £30 for *Planet Earth II*.

Personally, I think the price debate needs to take the end user into account – those who spend £15 on a movie to watch it on a 37in TV in stereo have more right to feel they're being short-changed than those of us who can make use of surround soundtracks and exquisite HD imagery. But that's my opinion – I'd be interested in hearing yours... ■

Are Blu-rays and Ultra HD discs too expensive? Let us know: email letters@homecinemachoice.com



Mark Craven remembers that the first movie he ever bought was *Highlander*, on VHS. He only threw it out five months ago



Film Fanatic

As another *Alien* film hits cinemas, **Anton van Beek** reflects on the impact Blu-ray extras have had on his response to previous instalments...

UNLESS YOU'VE SPENT the last few months living under a rock you'll have noticed that the publicity machine for Ridley Scott's *Alien: Covenant* has really cranked into action as the release date approaches (May 12th – stick it in your diary). In the process, the myriad previews, trailers and TV spots have unleashed a torrent of biomechanical terror that threatens to give away every last twist and turn of the film's still closely-guarded plot.

But I'm not here to moan about how film trailers these days seem to be designed specifically to spoil every single surprise there might be in store for potential audiences. Instead, all of the buzz around the latest entry in the *Alien* franchise got me thinking about my relationship with the other films, particularly *Alien: Resurrection* and *Prometheus*, by far the most divisive in the series.

Okay, neither are massively misunderstood masterpieces. As it happens I have a lot of time for *Prometheus* and think that it's a far better film than most people give it credit for. When it comes to *Alien: Resurrection*, though, it is the nadir of the series so far (like any sane person I don't count either *Alien vs. Predator* or *AVP: Requiem* as part of the official canon). Not that this has ever stopped me from going back and watching it again whenever I fancy indulging in an *Alien* marathon.

It's like *Alien*, but with jokes!

Why? Because, like Ridley Scott's lambasted prequel, *Alien: Resurrection* is a film full of fascinating ideas – the difference being that they're mainly hidden behind a plethora of missteps (not least the baffling belief that the one thing the series had been missing until this point was an overdose of camp humour). The mixing of Ripley's DNA with that of the alien is particularly potent, even if it pays off in the finished film as little more than a version of Sigourney Weaver's character who is gifted at basketball and a showdown with a monster that looks like a pot-bellied, naked Skeletor. And the scene in which she encounters her previous hybrid clones remains one of the most horrifying in the entire franchise.

Oddly, though, my appreciation of *...Resurrection* and *Prometheus* is no longer linked to their finished form. Thanks to the generous and in-depth bonus features that have accompanied the titles on Blu-ray (*Resurrection* received the same lavish treatment as its predecessors on the *Alien Anthology* Blu-ray boxset, despite being an inferior flick), I'm fascinated by the changes and permutations they went through before even a frame of film was shot.

These two films aren't alone in this either. The same can also be said about *Blade Runner*, *Fitzcarraldo*, *Apocalypse Now* and others.

My point is that **well-produced extra features can add to the experience of watching a film**. Spin it up again, and you'll see things in a different light. This makes it all the more disappointing that so many of the big Hollywood studios have stepped back from the sort of truly detailed documentaries that movie collectors used to take for granted. Just look at the difference between the bonus bits that joined the first few Marvel superhero flicks, compared to the reduced, cut-and-paste selection that has accompanied subsequent MCU releases.

Sadly, I don't see this situation changing. It will be interesting to see if *Alien: Covenant* gets anything like the vast array of extras that were included on the *Prometheus: Collector's Edition* Blu-ray. I'm already preparing to be disappointed ■

Are you a fan of extras or are they a waste of time and disc space? Let us know: email letters@homecinemachoice.com



Immediately after writing this column **Anton van Beek** booked a day off work to go through the *Alien Anthology* boxset again. Just like last month.

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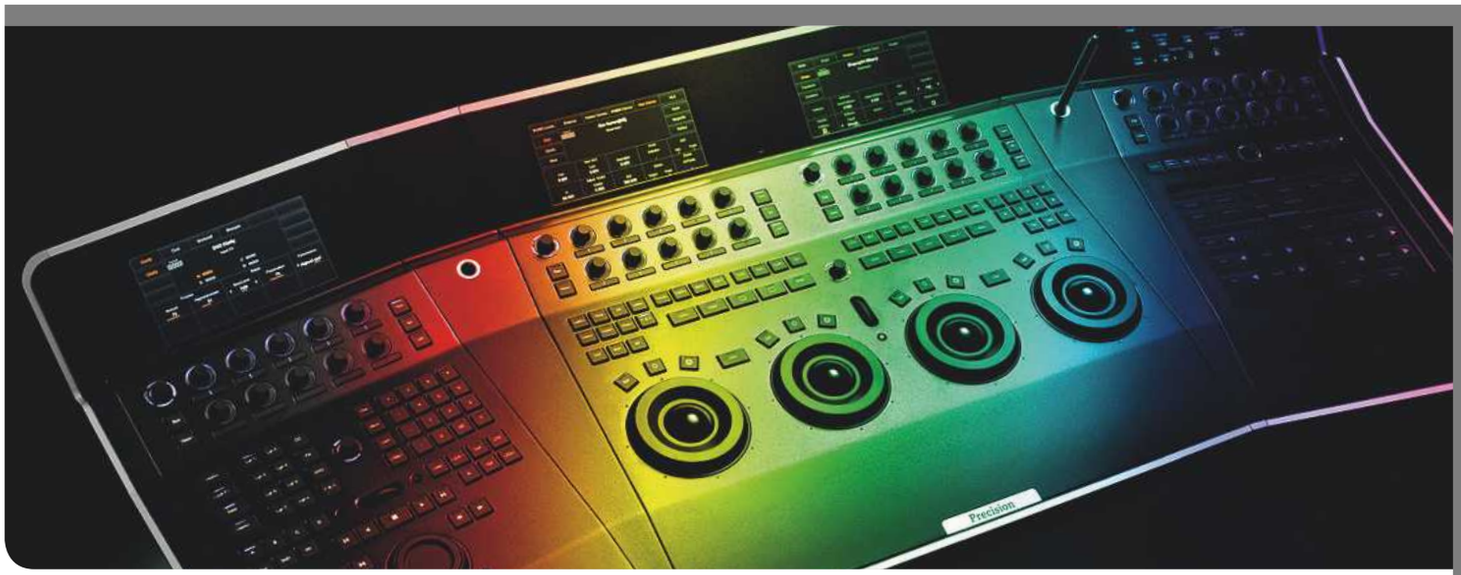


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In The Mix

When is a 2K-to-4K upscale not a 2K-to-4K upscale? When it's been carried out by image wizards in high-end post-production suites, says **Jon Thompson**

A QUESTION THAT was raised in this magazine recently is: 'Why should I bother with UHD Blu-ray if the source of the disc is just upconverted? My player and TV both say they can up convert to 4K, so, what's the point?' It's a good question as a significant number of films are originally mastered at 2K. Why are you paying more for the privilege of watching an upscale?

Well, there's a difference between your Blu-ray deck or TV upscaling to 4K and it being done in post-production. **Brace yourself, but the scaling both of your display or player is not very good**. Unfortunately, most if not all the manufacturers think it's good enough.

To turn a 2K master into a 4K (and HDR) master a lot of work is done in a semi-automated manner. This means that a second pass is carried out by an operator who fine-tunes the images. The tools used are vastly superior to anything in your domestic gear, due to the immense processing power offered by high-end post-production equipment. One of the most popular and flexible solutions, which I use a lot in day-to-day work, is Nucoda by Digital Vision. Its resize engine for 2K to 4K is second to none, along with its grain management tools; it can carefully remove unwanted artefacts that become apparent when you rescale up to 4K.

Typically, turning a 2K title into 4K HDR can have a day-to-five days' worth of work done on it depending on the budget and the state of the original elements. If you think that doesn't sound like a lot, consider that your hardware is doing it all in real-time.

Because of this work, a UHD Blu-ray from a 2K master will look better than a Blu-ray upconverted by a TV or player to 4K. And don't forget that a source will be 12-bit or higher, so in UHD will be 10-bit. The Blu-ray that it gets compressed to is 8-bit. It's also using the REC.709 colour space, while the original master will be in P3 colour. The UHD Blu-ray will maintain the P3 colour space via its BT.2020 container.

Moving on from 2K

That we need all this remastering work hints at a bigger problem, and that is that consumer technology is now running parallel to, if not overtaking, the level that professional movies are originally mastered or shot in. The film industry is running out of headroom to squeeze its consumers for versions of its films. Producers in the noughties made a misinformed decision to go for 2K digital masters, believing that gave them some kind of future-proofing. Only now are some being done at 4K. I remember been shouted down in a meeting years ago by a supposed digital expert who said no one will ever need 4K.

Content owners are living with distressed, dated assets that require redoing the whole picture in post to get the image up to a true 4K or higher master, and that's as long as it's shot on film.

The industry is known for sweating its assets; I think it might have wrung them dry now. Celluloid film has served it for well over 120 years; digital has lasted less than 10 years, it seems, before the master is obsolete. In another 10 years we may have lost a lot of films made in the last 20, as we will have no way to restore them – and you, the 8K-savvy viewer, will consider it too low-quality to watch. As much as we respect the value and input silent films made to our culture, hardly anyone watches them now as we have all moved on. Might the same apply to all these recent 2K titles? ■

Is Jon right, or do you actually watch silent films? Let us know: email letters@homecinemachoice.com



When he's not in his screening room, **Jon Thompson** tweets about Hollywood gossip, movie-making and digital mastering at @johnnyfocal

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Feedback

Got an axe to grind? Need to comment on current technology? Want to share your knowledge with our readers? **Team HCC** is here to help

In a nutshell

With regards to Mark Craven asking [Digital Copy, *HCC* #270] what SCART stands for, it's Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs. It's French.
Barry Rushby

Mark Craven replies: I knew it began with Syndicat! Honest.

Kit needs to stay the distance

Mark Craven says, 'It's probably not worth worrying about' HDMI v2.1 at the moment [see *Feedback, HCC* #271], but I would hope that AV companies do appreciate that we may indeed worry and that it might put us off buying new equipment.

I have a seven-channel Marantz AV receiver and run a 7.1 speaker system, but have been considering adding Dolby Atmos speakers. This means buying a new AVR. It's obvious that I want one that is as up-to-date as possible, but the new HDMI v2.1 specification surely means that anything I buy that doesn't have it will be old-fashioned pretty soon.

Steve May's article about HDMI 2.1 [see *HCC* #270] says that the format has been designed for 8K and higher video formats, plus other features to do with gaming and 3D audio. And 8K is certainly a long way off. However, my current AV receiver has been in my home cinema system for five years (I use a 1080p projector and Blu-ray player, so have had no need to invest in a 4K or HDR-ready model), and I hope that whatever I buy would provide a similar life-span.
Pat Blake



8K TVs will feature HDMI v2.1 inputs

Mark Craven replies: Just to recap for those not up to speed, HDMI v2.1 does indeed cater for 8K – and even 10K – video, courtesy of its much higher bandwidth of 48Gbps. Other tricks including catering for fast frame rates and object-based audio over HDMI's Audio Return Channel.

The new specification was announced during the CES tech show at the beginning of

Nothing to mumble about

I liked your little write up about the audio on *SS-GB* [*Digital Copy*, *HCC* #271]. I personally thought the audio was pretty good. It captured the mumbles very well and was crisp and clear, and indicated, if anything, that you probably would have had even more trouble hearing [actor Sam Riley] if you had physically been there on set and didn't have a directional microphone to help out. I therefore suspect the reproduction was more intelligible than actually being there... well done *SS-GB* sound!
Ian H

Mark Craven replies: Now that's an argument I haven't heard before.

Just to add to the *SS-GB* debate, it has a noirish plot that can be quite hard to follow. I think this may have contributed to some of the complaints that were ostensibly about audio quality...


Don't ask Sam Riley to read your eulogy...

January, but no hardware supporting it has yet been released. I'd be surprised if manufacture of the necessary chipsets had even got underway, meaning no receiver/processor/display maker can begin work on their own products.

Buying any AV receiver, which is usually used as a system hub in addition to just rustling up movie soundtracks, involves a certain amount of compromise, as AV standard *always* develop. As you say, your current Marantz model isn't up to speed with 4K and HDR passthrough.

However, it's still gainfully employed in your setup! There's no reason that a new AV receiver that you buy now, adding Dolby Atmos and – no doubt – support for Ultra HD Blu-ray, will also last for five years. When/if 8K arrives, it will do so in the same way as 4K – meaning displays that upscale to that resolution, players with split audio and video outputs, etc. You won't need to immediately junk your receiver.

Sound advice needed

Hi. I'm looking for help with my Onkyo HT-RC630 AV receiver with my 5.1 home cinema speakers. My problem is when watching normal TV it's great, but with films on TV or Blu-ray, sometimes the dialogue between actors is inaudible. I've tried a soundbar but have the same problem. My room is 7m x 5m x 5m high, with tiled floors. Any help would be amazing.
David Hale, via Facebook

Richard Stevenson replies: Right, not sure where to start here, David. Is your room really 5m high? I'm wondering if that's a typo as the typical average height of a UK room is around 2.5m. Assuming it is that high, it's a big space!

Anyway, is it only movies that you watch in 5.1? This might help explain why you say 'normal TV' sounds great but movies don't – your surround soundfield might be in need of fine-tuning to stop your centre channel, which handles most dialogue, being overrun by the other speakers.

The Onkyo HT-RC630 is one of the company's entry-level 5.1 receivers (with no support for bonus features like Dolby Atmos or Wi-Fi streaming) and something I'm not familiar with. Onkyo's website says it offers the AccuEQ calibration feature, although I can't find this in the manual online anywhere and there's no mic input on the AVR's front panel, so I think that might be a mistake.

AccuEQ would be handy as it will automatically measure speaker distances in your room and set levels accordingly, but without it you can still do this manually in the HT-RC630's onscreen menus. Use the 'Sp Config' menu to tell the AV receiver you are using a subwoofer in your system, and set speakers to 'small' or 'large'. You don't say what speakers you have but I would typically recommend setting them to 'small', and the crossover to 80Hz.

Next, use the 'Sp Distance' menu to input your speaker distance levels – these should be measured from your listening position. Once this is done, run a movie through your system and see if there's been any improvement – your centre speaker settings may have previously been inappropriate.

Another menu option, 'Level Cal', lets you experiment with the output level of individual channels. You might want to use this to boost the centre channel if you find that dialogue is 'inaudible'.

However, I fear this may not get to the bottom of the problem. You would appear to have a very sizable room with speakers being powered by a budget amp...

Star Letter...

Where's my Atmos mix gone?

Why is it that when there's Dolby Atmos on a movie soundtrack and the movie is also in 3D the twits who put out these Blu-ray films put the Atmos track on the 2D platter?

I can think of three examples off-hand – *Goosebumps*, *Gravity*, and now *Fantastic Beasts and Where to Find Them*.

I thought the 3D soundtracks were supposed to compliment the 3D visuals, or perhaps I have it all wrong, Maybe it's just another hook to sell 4K. Because, after all, according to the AV industry 3D is finished and we are moving on to the next big thing. What's the point of putting Atmos, etc, on 4K discs with no 3D? All the articles I read about the new 3D sound format said that it would help enhance the 3D experience. Now they are left off the 3D platters. You couldn't make it up....
Frederick Elliott

Anton van Beek replies: We feel your pain, Frederick. There's nothing I would like more than to watch *Gravity* on my home cinema setup in its native 3D partnered by the original Dolby Atmos sound design. Sadly, the 2014 3D Blu-ray preceded the first use of Atmos audio on Blu-ray by some seven months, then, when an Atmos re-release arrived in 2015, Warner didn't bother including a 3D version. The *Fantastic Beasts...* situation is a real shock though, as Warner had previously included Atmos audio, where appropriate, on all of its new release 3D Blu-rays. Fingers crossed this isn't the start of a worrying new trend at the studio.

As far as *Goosebumps* is concerned, the inclusion of an Atmos mix on the US 2D BD was clearly something of an anomaly, as Sony Pictures has subsequently decided to reserve object-based audio for use on its 4K platters.



Star letter-writer Frederick grabs the spectacular fantasy *A Monster Calls* on Blu-ray. Based on the best-selling novel by Patrick Ness, the film stars Lewis MacDougall, Felicity Jones, Sigourney Weaver and Liam Neeson in the story of a young boy who attempts to cope with his mother's life-threatening illness by immersing himself in a world of fantasy. *A Monster Calls* is available to own on Digital Download from April 28, followed by DVD and Blu-ray™ on May 8, courtesy of Entertainment One.


Fantastic beasts, flat audio in 3D

When will Sky get with the Dolby Atmos programme?

Regarding Dolby Atmos on football broadcasts from BT Sport [*AV Avenger, HCC* #271], I don't subscribe to BT Sport so this is of no use to me at all, unfortunately. Do you know when Sky will be adding Dolby Atmos to its service, sport or movies or whatever?
Adrian Richardson

Steve May replies: In a word, Adrian, no. Dolby Atmos is definitely on the Sky agenda >

(carried via Dolby Digital Plus), and is expected to feature with UHD content (most likely before the end of the year), but no timeline has been confirmed or whether that means, say, just with 4K movies or with all types of material. We'll keep our eyes (and ears) open for any announcement.

Is the Sony PJ futureproof?

I'm looking at purchasing the Sony VPL-VW320ES projector, but will not be upgrading my Denon AVP-A1HD pre-amp/processor and POA-A1HD multichannel power amp because they are fantastic.

So will this mean I have to bypass the amplifier and go straight from a 4K player to the projector to get a 4K picture?

Also, is the VPL-VW320ES futureproof for any minor 4K specification changes via a firmware upgrade? I am aware that it's getting an HDR firmware upgrade, as if I do buy this projector it will be my projector throughout the life-span of 4K, until 8K or whatever else becomes the next standard.

Also, should I consider the Epson LS10500 laser projector, which is around the same price as the Sony but isn't a native 4K model (it uses pixel-shifting)? Which one would you go with if you were deciding out of these two models?

Moninder, via Facebook



Sony's entry-level 4K HDR projector

Mark Craven replies: Firstly, the Denon pre-amp won't handle a 4K or HDR signal from any 4K Blu-ray player you want to use with the Sony VPL-VW320ES, as its HDMI stage isn't to the 2.0 spec (with HDCP 2.2 copy protection support). Both the AVP-A1HD and POA-A1HD were first launched in 2008, so are a little long in the tooth. A few years ago a paid-upgrade was offered to boost the HDMI spec to add 3D video passthrough to the feature roster, but a similar 4K upgrade hasn't arisen and isn't likely. I can't see Denon going to the effort of upgrading a processor that doesn't do Atmos or DTS:X to 4K/HDR. I think the ship has sailed for the AVP-A1HD.

You can continue to use the processor and amp in your setup, of course. Just use the audio-only HDMI output, or multichannel analogue output, on a 4K deck to feed your processor (check that whatever model you buy supports this), and the video HDMI output direct to the PJ.

As for the Sony projector's own format support, this was firmware tweaked last

WIN! Great Blu-rays up for grabs...

Just email your answer to Competitions@homecinemachoice.com to be in with a chance to win



The Last Kingdom: Season Two

The second season of the hit BBC historical drama is available to own on DVD and Blu-ray from May 8, courtesy of Universal Pictures (UK). To celebrate the release we've got five Blu-rays up for grabs!

Question:

Which actor plays the lead role of Uhtred in *The Last Kingdom*?

Answer:

A) Alexander Skarsgard **B)** Alexander Dreymon **C)** Alexander Armstrong

Email your answer with '*Last Kingdom 2*' as the subject heading – and don't forget to include your postal address!



Planet Earth II

Following the phenomenal global success of the BBC's *Planet Earth II* on BD and DVD last year, it recently became the first natural history TV series to be released on 4K/UHD BD.

To mark the occasion *HCC* has teamed up with BBC Worldwide to give away five copies of the *Planet Earth II* Ultra HD Blu-ray!

Question:

Which noted naturalist provides the narration for *Planet Earth II*?

Answer:

A) David Attenborough **B)** David Bellamy **C)** Steve Backshall

Email your answer with '*Planet Earth II*' as the subject heading – and don't forget to include your postal address!



Why Him?

James Franco and Bryan Cranston star in this hit comedy, which is available to own now on Digital HD, followed by Blu-ray and DVD on May 1, courtesy of Twentieth Century Fox Home Entertainment. To be in with a chance of winning one of five Blu-rays, just answer the following question correctly...

Question:

Bryan Cranston played a chemistry teacher-turned-drug kingpin in which TV series?

Answer:

A) *Grange Hill* **B)** *Breaking Bad* **C)** *Malcolm in the Middle*

Email your answer with '*Why Him*' as the subject heading – and don't forget to include your postal address!

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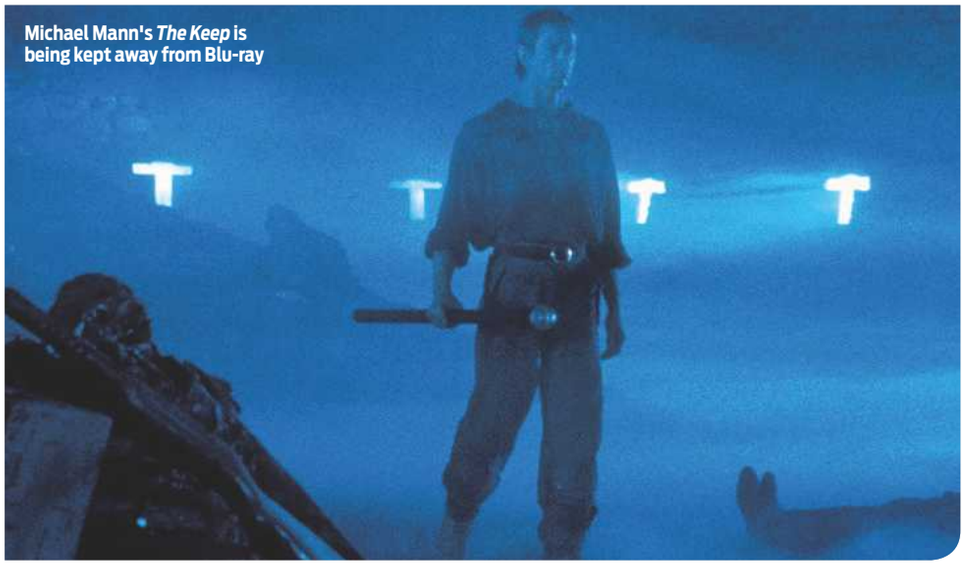
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Michael Mann's *The Keep* is being kept away from Blu-ray

Summer to cater for HDR 10, so is compatible with Ultra HD Blu-rays, plus the likes of Netflix. Futureproof for 'minor' 4K spec changes? If by this you mean Hybrid Log-Gamma HDR, then Sony is keeping things close to its chest. A more recent, step-up model (the VPL-VW550ES) will be compatible with HLG content, but when I asked Sony for any information regarding something similar being introduced for the VW320ES, I was told that nothing could be confirmed. It wasn't denied, either.

Epson's EH-LS10500 launched in the Autumn but we haven't yet had a chance to audition one. The previous model impressed, and there's certainly a possibility that it's laser light engine will suit HDR content more than the Sony's traditional lamp. But you need to weigh up its 4K upscaling vs the Sony's native delivery. As always, the advice is to get a demo at a friendly retailer.

Doubling up on subs

Great article on *Star Wars* in the last issue. Hard to believe it's now 40 years old. I was lucky enough to watch it at the cinema when it was originally released and can agree with Martin Dew that it truly did sound amazing, especially to an 11-year-old!

Since then I've owned *Star Wars: Episode IV* and its two sequels on VHS, DVD and Blu-ray (but not LaserDisc). I no longer have my VHS editions, but have kept my DVDs of the 'original' versions alongside the Blu-ray boxset of the Special Edition versions. Like all *Star Wars* fans, I'm hoping the original movies without the extra SFX, etc, will one day be released on Blu-ray!

Anyway, I have a question. If I want to add another subwoofer to my room for an improved bass response, should I be looking to get the same model? Or is it okay to mix different subs?
M. Wheatley

Richard Stevenson replies: Ideally you would want two identical subwoofers to achieve the best blend of LF output throughout your listening room, but I wouldn't suggest ruling out an additional woofer just because you couldn't find the same sub again. Your listening room will be having its own effect on how your system sounds, and you might just find a different sized/powered woofer brings benefits regarding room boom and suck-outs, or – as is the case with the professional install in this issue on p36 – improves performance at certain frequencies.

As always with subwoofers, you need to spend time experimenting with placement. Typically you'd install two subs in the corners of your front wall, or centrally on the front and rear walls, but this will all come down to where you have the space.

I'd suggest trying to borrow a second subwoofer from someone/somewhere for an afternoon so you can see how much of an affect it's having on your setup before buying a new one.

Contact us...

Write to HCC, AV Tech Media Ltd, Suite 25, Eden House, Enterprise Way, Edenbridge, Kent, TN8 6HF, or email us at **letters@homecinemachoice.com**
Please note: we cannot guarantee to print/answer all the letters we receive. Sorry.

Crazy for *Critters*...

Your reader Brian Chester says that *The Dirty Dozen* has been 'poorly treated' on Blu-ray [*Feedback*, *HCC* #271], but at least that film has had a Blu-ray release! There are still plenty of movies that I'm hoping to see on the format. Top of my list is *The Abyss*. I know this was rumoured a while ago but still remains unavailable.

Then there's also another James Cameron movie, *True Lies*, plus Michael Mann's *The Keep*, *Bringing out the Dead* and *After Hours* (both Martin Scorsese) and '80s stuff like *Earth Girls are Easy* and the *Critters* movies.
Neil Farrelly ■

Share your system in the mag!

Want to have you movie room featured in *HCC*? Then just send us some hi-res images – here are a few tips for great-looking pictures:



1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.
4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.
5. Don't be shy. Send a picture of yourself!
6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup – including a full kit list – and we'll then be in touch.

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HCC VERDICT

Passengers

➜ Sony Pictures ➜ All-region BD ➜ £25

WE SAY: Stunning AV credentials make *Passengers* a trip worth taking in your home cinema.

Movie: ★★★½☆
Picture: ★★★★★
Audio: ★★★★½
Extras: ★★½☆☆
OVERALL: ★★★½☆

➜ Passengers

During its 120-year journey to the planet Homestead II, the colony ship Avalon encounters an asteroid field and suffers a system failure. This results in one of the spacecraft's 5,000 passengers, mechanical engineer Jim Preston (Chris Pratt), being awoken from his hibernation pod 90 years ahead of schedule.

Having failed to repair his live-preserving pod and unable to get access to the sleeping crew, Jim comes to realise that he will live the rest of his life on the Avalon, with only a robot bartender (Michael Sheen) for company. So it goes for a full year, until Jim can't take the isolation any more and decides to sabotage the pod of a passenger he has become fascinated by, Aurora Lane (Jennifer Lawrence), thus dooming her to the same fate.

For its first hour or so, *Passengers* looks like it's shaping up to be something very special. From the dawning horror of Jim's situation to the appalling decision he makes to relive his crushing loneliness, the story sets up major moral quandaries for its characters to deal with. A more serious version of *Red Dwarf*, if you will.

However, without spoiling things, the second half of the film jettisons all this out of the airlock in favour of a more action-driven dénouement, becoming a mainstream Hollywood movie in the process. This is a shame, because what could have been a complex, adult piece of sci-fi is turned into another popcorn romance, albeit one that leaves a somewhat bitter taste in the mouth when it's over.

Picture: *Passenger*'s 2.40:1-framed Blu-ray encode paints a particularly convincing picture of sleek futurism. Large sections of the Avalon are built out of vast white spaces, the sharpness and clarity of which highlights the 1080p imagery's impeccable detailing and lends it an incredible sense of depth.

This cool modernism is contrasted with the Avalon's bar and swimming pool. The former has a warmth unmatched by other locations and is packed with small pockets of bright colour in individual drink bottles, while the latter bathes the screen in rich golden tones.

Overall, this is a scintillating image. Crisp, nuanced and fault-free.

Audio: The film's DTS-HD Master Audio 5.1 soundmix demonstrates convincing positional audio around a wonderfully large soundstage. And as the action heats up in the final act, the mix keeps pace, filling the entire speaker array with dynamic effects and room-rumbling bass notes. It's punchy and involving. Our only complaint is that, once again, Sony has made the Dolby Atmos version of the track exclusive to its 4K/UHD Blu-ray platter. Which is the sort of thing that will annoy many.

Extras: *Passengers* comes to Blu-ray with a fairly middling selection of bonus features. In addition to a quartet of behind-the-scenes featurettes (*Casting the Passengers*, *Space of Screen: The Visual Effects of Passengers*, *On the Set with Chris Pratt* and *Creating the Avalon*), the disc serves up eight deleted scenes, an outtakes reel and four fake ads for the Homestead Company and the Avalon.

Bleed for This

Icon → Region B BD
£18



From *Rocky* to *Raging Bull*, boxing has proved to be one of the most fertile arenas for the sport movie. Based on the true story of Vinny 'Paz' Pazienza, this engaging drama is generally less concerned with in-ring action than it is with charting Paz's astonishing comeback from the broken neck he sustained in a car crash. This UK Blu-ray release combines a refined 2.40:1 1080p encode with an atmospheric DTS-HD MA 5.1 mix that also understands the importance of absolute silence. Lacklustre extras consist of two three-minute promo featurettes, a trailer and six deleted scenes.

★★★☆☆

Blood Father

Warner Bros. → All-region BD
£25



Mel Gibson's lengthy journey of cinematic redemption continues with this 88-minute pulp thriller, which finds the actor playing a grizzled ex-con dragged into a fight with a drug cartel that has put a hit on his estranged daughter (Erin Moriarty). While it may have bypassed UK cinemas, don't let that put you off – this is brisk, brutal fun. *Blood Father* also cuts a very fine figure on Blu-ray; Warner's 2.40:1 1080p encode is finely detailed and comes accompanied by agile DTS-HD MA 5.1 sonics. It's just a downer that the disc is completely devoid of extras.

★★★½☆

Why Him?

Twentieth Century Fox → Region A/B BD
£25



Meet the Parents writer John Hamburg returns with another tale of an overprotective father (Bryan Cranston) struggling to come to terms with his potential son-in-law (James Franco). This time out the result can basically be boiled down to (i) inappropriate language, (ii) jokes about bodily functions or (iii) a mix of the two – pretty crude stuff to be sure, but also funny if you're in the right frame of mind. Fox's Blu-ray release makes it all the more palatable with pristine Full HD visuals, modest DTS-HD MA 7.1 sonics and fair array of extras – although most are just character-specific outtakes.

★★★☆☆



Plane sailing for Eastwood

True-life drama makes a splash on Blu-ray with its top-notch AV talents

→ Sully: Miracle on the Hudson

Based on true events, Clint Eastwood's latest directorial outing stars Tom Hanks as US Airways pilot Chesley 'Sully' Sullenberger, who famously landed his plane on New York's Hudson river in 2009.

Rather than recasting the incident in the manner of a disaster film, *Sully...* is structured around the NTSB (National Transportation Safety Board) investigation into the event, using this as a springboard to contrast the practical experience of emergency-landing a plane in a big puddle against the NTSB's theoretical analysis of what should have happened. Are Sully (Tom Hanks) and his first officer Jeff Skiles (Aaron Eckhart) heroes, or guilty of a costly error in judgement?

Never a subtle film (the antagonism of the NTSB investigators casts them as obvious villains), *Sully...* still finds Eastwood on surer ground as a director than the uneasy heroics of *American Sniper* and the lacklustre musical musings of *Jersey Boys*. And the plane crash sequences convince.

Picture: Shot using Arri Alexa 65 cameras, *Sully...* arrives on Blu-ray with a eye-opening 2.40:1 digital-to-digital 1080p encode. Imagery is razor-sharp with impeccable clarity inherent in every shot. Close-ups prove particularly detailed, revealing hairs, pock-marks and facial scars.

The colour palette is fairly muted, leaning towards a rather grey appearance, but it suits the real-world nature of the material and doesn't impact on flesh tones. Meanwhile, black levels are superb and there's plenty of shadow detail.



It'll be interesting to see how the 4K HDR Blu-ray (released simultaneously to this 1080p disc, but not made available for review) can improve on this.

Audio: From the nightmare that opens the film, *Sully...*'s sound design really makes good use of its Dolby Atmos soundstage. Use of the height channels is very effective – not just in the flashbacks to the incident itself, but also in the way the film transitions out of them, with aircraft noise carrying up and over you from behind as the action moves back to the present.

Extras: *Moment by Moment: Averting Disaster on the Hudson* (16 minutes) talks about the real events with the people actually involved. *Sully Sullenberger: The Man Behind the Miracle* (20 minutes) offers a biographical account of the man himself with input from family and friends. Finally, *Neck Deep in the Hudson: Shooting Sully* (20 minutes) focuses on the film's production.





HCC VERDICT

Sully: Miracle on the Hudson
→ Warner Bros. → All-region BD
→ £25

WE SAY: Eastwood returns to form with a tidy drama that looks and sounds the business on BD.

Movie: ★★★★☆
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★☆☆☆
OVERALL: ★★★½☆

DISC OF THE MONTH

Franchise goes Rogue

The first *Star Wars* spin-off movie proves there's more to life than Luke Skywalker's lightsaber on a thrilling 1080p Blu-ray...



➜ Rogue One: A Star Wars Story

The reborn *Star Wars* movie universe continues in exhilarating fashion with this adventure that gives the main Luke/Leia narrative a swerve and feels all the better for it. While 2015's *The Force Awakens* got somewhat bogged down in rehashing old *Star Wars* plots and bringing back old cast members, *Rogue One* always feels fresh and is populated by (mostly) new characters.

As you'll no doubt be aware, the story here takes its cue from the opening text crawl of *Episode IV: A New Hope*: 'Rebel spaceships, striking from a hidden base, have won their first victory against the evil Galactic Empire. During the battle, Rebel spies managed to steal secret plans to the Empire's ultimate weapon...'.

We're in prequel territory, then, following events that lead right up to how the franchise began, with Felicity Jones' reluctant rebel trying to track down her father (Mads Mikkelsen), a research scientist brow-beaten into designing the Death Star who claims the new weapon has an inherent flaw.

Along for the ride are Riz Ahmed's defecting Imperial pilot, Diego Luna's Rebel Alliance officer, Donnie Yen's blind fighter (and Force aficionado) and lumbering droid K-2SO, who has a wickedly deadpan sense of humour. Maintaining continuity with *Rogue One*'s mother franchise and keeping Dark Side fans on side are Darth Vader and Grand Moff Tarkin (a CGI Peter Cushing).

With plenty of new characters on screen, this iteration of *Star Wars* can take a while to get used to, and it helps that the production design harks back to *Episode IV* and manages to make the film look concurrent to a movie that's 40 years old – albeit with far superior SFX. Director Gareth Edwards proves an inspired choice too, bringing some of the eye for largescale beauty (and destruction) he showcased in 2014's *Godzilla*.

Set-piece moments, like a Death Star-assisted city annihilation, are wonderfully staged, while the final act, which cuts between a ground-based skirmish, stealth raid on a vault and Rebel v Empire space battle, is perhaps the most thrilling sequence the whole saga has yet delivered.

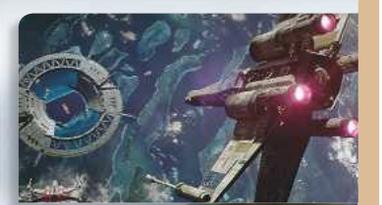
As the first venture outside of the familiar *Star Wars* timeline, *Rogue One* is a triumph. It's also a fine example that sometimes it pays to ignore all the rumours about reshoots and last-minute edits, and wait to judge the finished product.

Picture: This Full HD Blu-ray offers a delightful image, yet one that's a tale of two halves.

From the beginning, *Rogue One* really embraces its dark side. As Imperial ships



Meet the *Star Wars* saga's very own Dirty not-quite-a-Dozen





approach the planet of Lah'mu in the opening moments, if your display's black levels are set incorrectly you may wonder what's going on. Later, scenes on Jedha appear dark and grubby, as do those at the rainy research facility on the planet Eadu. This is then totally contrasted by the bright tropical look of Scarif (filmed at Laamu Atoll in Maldives), where lush blues and greens feel diametrically opposite to the first two-thirds of the movie. The grade by colourist Mitch Poulson moves from mostly muted tones to searing eye-candy.

Yet even in darker moments there's plenty of shadow detail in the 2.40:1 picture, from the flecks of purple present in Lah'mu's volcanic landscape, and writing on the rocks where the young Jyn Erso is hiding, to the battle-worn clothing of the Rebel crew.

The image has no banding or contouring visible, a miracle considering the dynamic range it is covering. There's a natural sharpness to it, never looking forced or oversharpened. Shadow delineation is natural.

Most of the live action was lensed in Ultra Panavision 65mm and effects-based shots captured on the IMAX wide dynamic range Alexa 65 digital camera. The film was then mastered at 4K. Again, we are left wondering what it would look like on UHD Blu-ray in HDR – we can only hope that Disney will release it in that format sooner rather than later.

Audio: This disc carries only a 'vanilla' DTS-HD Master Audio 7.1 mix, while the theatrical mix was in full Dolby Atmos. No doubt any re-release on UHD Blu-ray will carry an Atmos track but for the moment it's 7.1. The good news is that you're still in for a sonic treat.

It's truly a full-on experience, from sequences on Lah'mu to the test firing of the Death Star and frenetic final-act battle scenes. Dialogue is well balanced and clear, and the musical score by Michael Giacchino is well integrated, never sounding just stuck on. All channels are consistently used to produce an envelope of sound that puts you right in the middle of the action and never lets up.

LFE is deep and extensive; the destruction of Jedha is a workout for your sub, while the following escape sequence is a *tour de force* of surround effects placement that will be used as demo fodder for years to come.

Keep an ear out for a Wilhelm Scream or two. This may be a spin-off, but it continues that particular *Star Wars* tradition.

Extras: A second Blu-ray platter is employed to house all of the extras, but we expect most fans will still feel rather short-changed.

In place of a single over-arching documentary, *Rogue One* instead serves up a collection of 10 behind-the-scenes featurettes. Clocking in at anywhere between four and nine minutes, they mainly focus on the cast and their characters, although there are a couple of more interesting pieces that explore the production design and the digital recreation of a couple of franchise icons.

The only other extra is a five-minute video exploring the myriad *Star Wars* connections and Easter Eggs hidden in the film.

Given all of the reshoots and restructuring the film apparently underwent we were hoping for much more – at the very least, some of the deleted scenes that were glimpsed in the film's trailers, or a chat track from Gareth Edwards.

HCC VERDICT

Rogue One: A Star Wars Story

➜ Walt Disney ➜ All-region BD ➜ £25

WE SAY: A barnstorming new addition to the *Star Wars* universe on a top-quality Blu-ray.

Movie: ★★★★★
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★½☆☆
OVERALL: ★★★★½

Arcade Action

Bigscreen home entertainment isn't just about movies anymore. **Rik Henderson** checks out a videogame vying for time on your home cinema system...





The Legend of Zelda: Breath of the Wild

Nintendo ➜ Switch, Wii U ➜ £55

Even the mighty Nintendo can drop the ball sometimes – after all, its last-generation console failed spectacularly. But the Switch has already been a success since launching at the start of March, both critically and in terms of sales, which is in no small part thanks to *The Legend of Zelda: Breath of the Wild*.

This has been the bestselling launch game in Nintendo's illustrious history and for good reason: it's marvellous.

As perennial hero Link, you wake in a Hyrule long demolished, 100 years after your last battle and with no memory of what has happened. Cue yet another quest to defeat the evil Ganon and rescue Princess Zelda.

It's fairly standard plotting really for any Japanese role-playing game, let alone *Zelda*, but the scenery and mechanics are far from par for the course. This is the first game in the franchise that is truly open-world and sandbox in style. The playing field is massive and there is so much to see and do that you can while away hours of your life without even making a dent in the storyline.

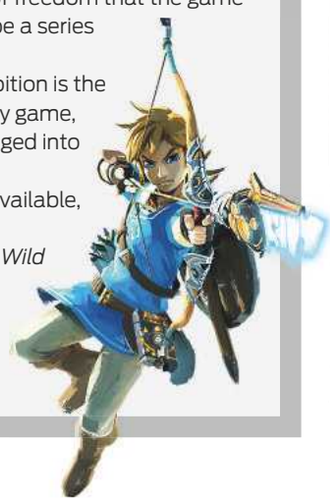
As with other *Zelda* games, play is a cross between exploration, combat and puzzle-solving, with the latter more than catered for in the 120 shrines to be discovered across the landscape. There is distinct thought in their construction and many will have you scratching your head in bewilderment.

Meanwhile, crafting comes to the franchise for the first time, with almost every plant, animal and mineral able to be made into food or potions. It adds a further sense of freedom that the game already excels in, and we'd imagine it'll be a series mainstay from here on in.

The only slight caveat to its huge ambition is the graphical representation. It's a very pretty game, but only 900p30 on a Switch when plugged into a TV, and 720p30 on the 6.2in screen in handheld mode. A Wii U version is also available, but is locked at 720p regardless.

While both versions of *...Breath of the Wild* offer a 5.1 soundmix, the Switch edition offers better fidelity for the game's glorious musical score.

★★★★★



Swiss Army Man

Lionsgate ➜ Region B BD
£25



Stranded on a desert island, Hank (Paul Dano) thinks his life is over, only for salvation to arrive in the unlikely form of a flatulent corpse (Daniel Radcliffe). An odd mixture of low-brow toilet humour and affecting study of loneliness, *Swiss Army Man* is the strangest buddy movie you'll ever see – but make no mistake, it's definitely worth seeing. Arriving on Blu-ray with a detailed 2.40:1 1080p encode and playful Atmos soundtrack, the film is supported by some rather interesting extras, including a Q&A dedicated to the sound design.

★★★½☆

Dead or Alive Trilogy

Arrow Video ➜ Region B BD
£30



Takashi Miike's electrifying crime trilogy takes us from gang wars in contemporary Japan to a cyberpunk future of battling replicants, via a soulful account of two childhood friends who grew up to be professional hitmen. The first two films (*Dead or Alive* and *Dead or Alive: Birds*) share a disc and are in pretty good shape, despite some inherent softness in the HD masters. The third film (*Dead or Alive: Final*) shares its disc with the bulk of the extras and looks unavoidably ugly – not only was it shot digitally in standard-def, but this encode is derived from an NTSC master replete with interlacing and burnt-in subtitles.

★★★½☆

Brotherhood of Blades

Second Sight ➜ Region B BD
£20



Three members of the Imperial Assassins find themselves at the heart of a complex and ever-shifting conspiracy in this period wuxia film. Balancing its showstopping fight scenes with excellent performances and an involving storyline that keeps you guessing right to the end, *Brotherhood of Blades* is one of the best martial arts flicks to appear in some time and is a must-watch for fans of the genre. While this hi-def release is unfortunately devoid of extras, the film's 2.40:1-framed 1080p visuals and DTS-HD MA 5.1 soundtrack are both first-rate.

★★★½☆



Groot has got a lot bigger since the end of *Guardians of the Galaxy*



Talking tree's tragic tale

Powerful, sumptuous-looking children's fantasy has things to say about grief and loss

→ A Monster Calls

Late one night, 12-year-old Conor O'Malley (Lewis MacDougal) is visited by a giant tree-like Monster (voiced by Liam Neeson), who tells the boy that he will recount three true stories, but after that Conor must tell him a story about the terrible truth that haunts his nightmares. For his part, Conor becomes convinced that the Monster has been summoned to save his mother (*Rogue One...* star Felicity Jones), who is undergoing treatment for cancer.

Adapted from the novel of the same name by Patrick Ness (based on an original idea by Siobhan Dowd, who was battling terminal cancer at the time), *A Monster Calls* follows in the footsteps of films like *Paperhouse*, *Grave of the Fireflies* and *Kubo and the Two Strings* in using the venue of a children's movie to explore adult themes. That it doesn't quite reach the same heights as those films is no bad thing; it remains an incredibly effective tear-jerker that refuses to pulls its punches.

In the hands of Spanish director J.A. Bayona (*The Orphanage*, *The Impossible*), *A Monster Calls* is also strikingly beautiful. Phenomenal visual effects bring the Monster to life, seamlessly integrated into real-world settings, while the watercolour animation used to illustrate his first two stories provide the film with a mesmerising aesthetic and change of pace.

Gorgeous to look at, brilliantly acted and with something meaningful to say for itself, *A Monster Calls* is a children's film with universal appeal.

Picture: *A Monster Calls* arrives on Blu-ray with an authentic, if occasionally muted, 2.40:1-framed 1080p encode. While animated interludes are awash with vibrant colours, the more mundane everyday material veers towards a cooler appearance that favours duller browns and greens.

Detail levels are generally excellent, although a couple of the big visual effects shots look soft by comparison, with delineation and detail taking a slight knock. Still, from a purely technical standpoint, the Blu-ray encode itself is rock solid, with no trace of banding, artefacts or aliasing.

Audio: The DTS-HD Master Audio 7.1 mix is an absolute delight. While it's hardly a shock that the Monster's every visit is accompanied by the deep bass of his footsteps, there are smaller touches that really surprise, such as the way the mix cleanly picks out the sound of his individual branches moving against one another. Effects are placed in the soundfield with precision; sequences such as Conor's nightmare (Chapter 15), do a sterling job of grounding the listener is the middle of a maelstrom of individual sonic elements.

Extras: The Blu-ray plays home to a chat-track by author and screenwriter Patrick Ness; a five-part EPK-style *Making of...* documentary (aggregate running time: 21 minutes); a breakdown reel for the two animated sequences showing the progress from storyboard to final footage; and five deleted scenes

Absent from this UK disc is the Spanish-language commentary from director J.A. Bayona that joins the above on Universal's US Blu-ray. Bah.



J.A. Bayona is currently shooting *Jurassic World 2*, due for release next June



HCC VERDICT

A Monster Calls

→ Entertainment One
→ Region B BD → £25

WE SAY: This moving movie makes a very strong impression on Blu-ray. It's just a pity the director's commentary has gone missing.

Movie: ★★★★½
Picture: ★★★★½
Audio: ★★★★★
Extras: ★★½☆☆
OVERALL: ★★★★½



The once and future king?

Arthurian epic doesn't quite add up to a premium experience on BD

→ Excalibur: Premium Collection

From the earliest days of cinema, the Arthurian legend has proven to be irresistible to filmmakers. Key to this is the way in which the source material is open to such wildly disparate approaches on the silver screen, whether it's the medieval brutality of *Lancelot du Lac*, the animated antics of Disney's *Sword in the Stone*, Richard Harris singing his way around *Camelot* or the Monty Python gang's quest for the Holy Grail.

For his 1981 film, director John Boorman returned to what must surely be the best-known piece of Arthurian literature, Thomas Malory's 15th century novel *Le Morte d'Arthur*. Shot entirely on location in Ireland, the resulting film is a tale of sex and violence, love and betrayal, power and corruption; all filtered through a prism of unknowable primordial forces.

It is, of course, completely bonkers. But Boorman commits to the lunacy so completely and stages scenes of such astonishing lushness that it proves impossible to resist.

Picture: Shot with a mix of fog and filters, *Excalibur* was never going to be a film for those that like their hi-def encodes razor-sharp and packed full of fine details. That said, Warner's Blu-ray presentation is a seemingly accurate representation of the source material, and still plays host to deep shadows and areas of verdant colour within all of the mud and grime. Native film grain is finely resolved and the source print is in good condition.

We do have an issue the framing of the 1080p image. While most sources claim that the film was originally composed for 1.85:1, there are counter-claims that a 1.66:1 version, which appeared on UK TV, more accurately reflects the intentions of Boorman and cinematographer Alex Thomson.

Either way, Warner has ignored both options by presenting the film at 1.78:1 instead. In the process it appears to have cropped the picture tighter at the top of the frame for some unknown reason, which has a major impact on the headroom in the image.

Audio: There's no sign of the original audio here, just a DTS-HD MA 5.1 remix. Even if you overlook the almost total absence of rear effects, it's still a pretty inconsistent soundtrack that suffers from some obvious distortion and limited dynamic range.

Extras: Mirroring previous DVD and HD DVD releases, the only extras included on the Blu-ray are the theatrical trailer and a commentary by the director. As is usual with these Premium Collection Blu-rays, four art cards are included.







Liam Neeson and Helen Mirren (above) are just two of the many famous faces who pop up in *Excalibur*

HCC VERDICT

Excalibur: Premium Collection

→ Warner Bros. → All-region BD & R2 DVD → £15 (HMV exclusive)

WE SAY: The quest for the definitive home cinema version of Boorman's Arthurian classic continues...

Movie: ★★★★★
Picture: ★★★★½
Audio: ★★½☆☆
Extras: ★★☆☆☆
OVERALL: ★★★☆☆

Shut In

Arrow Films → Region B BD
£18



Let's not beat around the bush, *Shut In* is a terrible film. Little more than a list of familiar horror clichés anchored to one of the most ludicrous twists imaginable, this dunderheaded thriller wastes the talented Naomi Watts in the role of a widowed child psychologist who believes that the ghost of a missing patient is haunting her and her paralysed teenage stepson. On a more positive note, the 2.40:1 Blu-ray encode is delightful, while the film's DTS-HD MA 5.1 mix is loaded with directional cues and low-end effects. The disc suffers from a complete lack of extras.

★½☆☆☆

The Chamber

StudioCanal → Region B BD
£25



Set almost entirely within the confines of a tiny trapped sub that is slowly taking on water, this claustrophobic thriller (set at the bottom of the Yellow Sea, but shot just outside Cardiff) is an effective example of a debut filmmaker making the most of a tight budget. Unsurprisingly, the film leans heavily on its sound design to bring the setting to life, and the resulting DTS-HD MA 5.1 mix proves to be one of the highlights of this Blu-ray release. Picture quality is also of a high standard, if occasionally hampered by banding. Rounding out the disc are a commentary and *Making of...* featurette.

★★★½☆

Stake Land II

Kaleidoscope → R2 DVD
£16



Pitched somewhere between *The Road* and *I Am Legend*, 2010's *Stake Land* was an unusually intelligent take on vampire lore. Sadly, while actors Connor Paolo and Nick Damici are back (Damici also takes sole scriptwriting credit), *Stake Land II* is a far more prosaic effort that is content to simply replay the story beats of the original (albeit to lesser effect) rather than carving out a path of its own. Forgoing Blu-ray in the UK, *Stake Land II* arrives on DVD with an agreeable anamorphic 2.40:1 transfer and modest Dolby Digital 5.1 soundscape. A 23-minute *Making of...* and trailer are the extras.

★★☆☆☆

Female Vampire

Maison Rouge → R2 DVD
£10



Cult director Jess Franco's 1975 schlock-fest stars Lina Romay as a mute vampire who drains the life from her victims through hanky-panky. Hardly high art then, but also a damn sight more watchable than the majority of Franco's sleazy flicks. In addition to a remastered – but still far from pristine – anamorphic 2.35:1 transfer of the full-length cut, this DVD includes a shorter version under the title *Erotikill*, which removes some of the sex and plays up the horror elements. Other extras are an interview with Franco, a tribute to Romay and trailers for this and the label's other films.

★★★☆☆

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'Aren't you a bit too old to still go trick or treating?'



Sinister storeys...

Remastered hi-def boxset brings the eclectic fright franchise home for the horror-days

➜ House: The Collection

One of the odder horror franchises of the VHS era, the *House* series spans four films, three of which have nothing linking them to each other apart from their titles and some creative personnel.

House (1986) stars William Katt as a troubled author who moves back to his old family home to write about his experiences during the Vietnam war, only to be plagued by all manner of monsters (and a set of self-willed garden tools). A big hit on video back in the day, this horror-comedy may be pretty tame compared to many of its contemporaries, but it's still a lot of fun and serves of a reminder of the glory days of prosthetic creature effects.

The unrelated *House II: The Second Story* (1987) is even lighter in tone than its predecessor, almost entirely ditching the horror in favour of a supernatural adventure story that sees a young man (Arye Gross) helping his zombie cowboy grandfather (Royal Dano) to protect a magical crystal skull.

House III: The Horror Show (1989) has Lance Henriksen's police detective battling the ghost of a serial killer (Brion James). Grim and bloody stuff, the film dropped the *House* title in the US and really does feel like the product of a different franchise.

Finally we have *House IV: The Repossession* (1992), which features the ghost of William Katt's character from the first film trying to protect his family from some low-rent hoodlums. Add bogus native American mysticism and a haunted pizza and the end result is a garbled mess of a movie.





HCC VERDICT

House: The Collection

➜ Arrow Video ➜ Region A/B BD & R2 DVD ➜ £60

WE SAY: A strong – but not perfect – hi-def showcase for this wildly inconsistent quartet of horrors.

Movie: ★★★☆☆
Picture: ★★★★☆
Audio: ★★★½☆
Extras: ★★★★½
OVERALL: ★★★½☆

Picture: Arrow has restored all four *House* films in 2K from original 35mm elements: interpositives in the case of the first three, an internegative for the fourth. For the most part, the end results are as good as could be hoped for, although there are a couple of caveats worth mentioning.

The first two films look by far the best, although the decision to reveal more of the image area in *House* has resulted in a few shots that feature unwanted picture information on the left of the frame (including a crew member's arm at one point).

House III... is presented as both the heavily-cut US version and longer European incarnation, both of which look authentically dark and grubby. Despite the clean-up, *House IV...* has an inherent softness similar to that of a TV movie.

Audio: All four films offer up LPCM 2.0 presentations of their original stereo soundtracks and DTS-HD MA 5.1 remixes (*House* also adds an LPCM mono track). For our money, the original stereo tracks are the best, with the 5.1 affairs seemingly opting to simply bump up the volume to make up for a shortfall in effective surround cues.

Extras: Each movie is accompanied by audio commentaries, trailers and stills galleries, while the first, second and fourth films are also supported by a series of retrospective *Making of...* featurettes (the third opts for separate interviews instead – one of which includes behind-the-scenes footage of the legendary 'open heart' scene).

This limited edition boxset also comes bundled with a mammoth 148-page book about the series.

The Innocent

CultFilms → All-region BD
£20



The final film by Italian neorealist filmmaker Luchino Visconti, this ravishing 1976 period piece (aka *L'Innocente*) stars Giancarlo Giannini as a philandering aristocrat who forsakes his wife (Laura Antonelli) for another woman, only to fall in love with her all over again when he learns that she, too, has taken a lover. Based on a recent restoration, this UK BD is a joy to behold; the rich 2.35:1 1080p encode providing a superb canvas for the film's opulent visuals. The disc also houses a 48-minute interview with two of Visconti's friends who worked closely with him during the making of the film.

★★★★★

The Mephisto Waltz

Signal One → Region B BD
£15



One of the many occult movies that followed in the wake of *Rosemary's Baby*, this tame fright flick finds Jacqueline Bisset playing the wife of a frustrated musician (a pre-*M*A*S*H* Alan Alda) who notices a change in his behaviour and slowly comes to realise that his body has been possessed by a dying concert pianist. Hamstrung by a lack of directorial flair, *The Mephisto Waltz* is still worth checking out for its strong cast and surprisingly subversive finale. Signal One's typically robust 1.85:1-framed Full HD presentation is supported by an informative chat-track and video essay.

★★★☆☆

My 20th Century

Second Run → All-region BD
£20



This witty Hungarian fable tells the story of orphaned twin sisters who grow up unaware of each other – one a feminist anarchist, the other a frisky hedonist (both played by Dorotha Segda). Thematically rich, visually stunning and packed with whimsical flights of fancy, writer-director Ildikó Enyedi's 1989 debut feature is a must for lovers of more experimental cinema. It also doesn't hurt that the Blu-ray is a winner, serving up crisp 1.33:1 1080p visuals and clean LPCM mono audio. An interview with Enyedi and excellent 20-page booklet are also included.

★★★★½

The Proud Valley

StudioCanal → Region B BD
£23



Disaster movie meets social realist drama (with a bit of musical thrown in for good measure) in this 1940 Ealing film about a black American ship's stoker (Paul Robeson) who finds work in a South Wales coal mine, joins the local male voice choir and even helps the community battle to save the pit from closure. Another impressive addition to StudioCanal's 'Vintage Classics' range, *The Proud Valley* arrives on Blu-ray with a good-looking Full HD restoration and some quality extras including a selection of audio tracks from Robeson's legendary 1957 Transatlantic Exchange Concert.

★★★½☆

Beauty and the many beasts

Not owning this astonishing Borowczyk Blu-ray would be the biggest sin of them all

→ Story of Sin

An innocent young woman (Grazyna Dlugolecka) journeys across Europe searching for the man she loves, only to end up trapped in a moral quagmire of adultery, prostitution and murder.

Adapted by Surrealist filmmaker Walerian Borowczyk from a novel by celebrated early 20th century Polish author Stefan Zeromski, anybody expecting something along the lines of his more notorious films, such as *Immoral Tales* or *Behind Convent Walls*, may be surprised by the far more restrained nature of this Palme d'Or-nominated period melodrama.









But stripped of the more explicit, ahem, distractions of his other films, *Story of Sin* serves as a showcase for Borowczyk's skill as a storyteller and how he was capable of caring as much about a film's flesh-and-blood characters as he was for the fetishistic knick-knacks that regularly shared the frame.

Picture: Maintaining the high standard it set with its previous Walerian Borowczyk Blu-rays, Arrow serves up a gorgeous 1.66:1-framed Full HD AVC encode of *Story of Sin*. Based on a 4K scan of the original 35mm camera negative, with restoration supervised by Fixafilm's Wojtek Janio and Arrow's James White, the imagery is beautifully resolved and there's not a trace of either print damage or encoding-related imperfections to be seen.

Audio: While it may not command quite as much attention as the restored visuals, *Story of Sin*'s mono soundtrack has also been cleaned up for this release. The resulting LPCM 1.0 mix delivers dialogue faultlessly, and has the range to keep pace with the violin-based classical score.

Extras: Arrow collectors might be tempted to think that the label would have little new to add alongside *Story of Sin*, as it's already sourced plenty of Borowczyk bonus bits for other releases. But they'd be wrong.

Once again there's too much to go into in detail, but highlights include a fascinating commentary by Kat Ellinger and Samm Deighan (of the Daughters of Darkness Podcasts); a lengthy interview with actress Grazyna Dlugolecka; new restorations of three more of the director's short films (*Once Upon a Time*, *Dom* and *The School*); plus explorations of the use of classical music and the visual/thematic motifs found in his films.

The set also includes a superb 44-page booklet housing a new piece by expert Daniel Bird, plus several archival essays and interviews. >

HCC VERDICT

Story of Sin
→ Arrow Academy → All-region BD & R0 DVD → £25

WE SAY: Arrow delivers a typically all-encompassing Blu-ray package for an atypical Borowczyk flick.

Movie: ★★★★½
Picture: ★★★★★
Audio: ★★★½☆
Extras: ★★★★★
OVERALL: ★★★★½



Adventures in Technicolor

This restored Errol Flynn swashbuckler hits the bullseye in 1080p

→ The Adventures of Robin Hood: Premium Collection

When Richard the Lionheart is taken captive on his way back to England from fighting in the Holy Land, his duplicitous brother Prince John (Claude Rains) usurps the throne and begins oppressing the Saxon populace through a combination of high taxes and violence. But Prince John hadn't counted on Saxon nobleman Sir Robin of Locksley (Errol Flynn), who gathers together a band of like-minded outlaws dedicated to opposing the royal rotter.

Helmed by Michael Curtiz (replacing original director William Keighley), this classic adventure movie finds Errol Flynn at his swashbuckling best, leaping into action at the drop of a hat, pausing only to put his hands on his hips while throwing his head back to laugh. The supporting cast is no slouch either: Rains and Basil Rathbone (Sir Guy of Gisbourne) make for deliciously hissable villains, while Olivia de Havilland is a spirited Maid Marian.

Picture: It may be nothing more than a direct port of the Blu-ray that hit the US almost nine years ago(!), but this long-awaited UK outing for *The Adventures of Robin Hood* still looks terrific. There's a clarity and stability to the 1.37:1 imagery that speaks volumes for the amount of work that Warner Bros. put into restoring the film, while the Technicolor palette has a richness and vibrancy that few other movies can match. Meanwhile, grain is finely resolved and gives the digital image an authentic film-like appearance.

Audio: There are no fancy surround sound remixes here. Instead Warner Bros. opts for a lossy Dolby Digital presentation of the film's original mono soundtrack. While this does a perfectly serviceable job with the dialogue and music, it ultimately feels a little bright and thin, leaving us wondering how it could have been improved by the added depth and range of a lossless incarnation.



Robin really is a very merry man...





Extras: There's a mountain of goodies for film fans to get stuck into. These vary from an audio commentary by film historian Rudy Belmer, to a 'Warner Night at the Movies' viewing mode that harks back to the original cinema release by playing a vintage trailer, newsreel, musical short and *Merrie Melodies* cartoon alongside the film. Fun.

Other treats include two Robin Hood-themed Bugs Bunny and Daffy Duck cartoons (restored in 1080p); home movie footage shot during the production; an audio-only presentation of the entire score; and an hour-long documentary about the history of Technicolor. The Blu-ray also comes bundled with four exclusive art cards.

HCC VERDICT

The Adventures of Robin Hood: Premium Collection

→ Warner Bros. → All-region BD & R2 DVD → £15 (HMV exclusive)

WE SAY: Another cracking catalogue release from Warner Bros.

Movie: ★★★★½
Picture: ★★★★½
Audio: ★★★½☆
Extras: ★★★★★
OVERALL: ★★★★½

The Big Heat: Limited Edition

Indicator → All-region BD & R0 DVD → £23



The past year has seen more and more film noir classics hitting Blu-ray in the UK and now its the turn of one of the best of the bunch: Fritz Lang's 1953 masterpiece about a homicide detective seeking revenge on the gangsters who killed his wife. It features here on a glorious hi-def package that presents fans with a beautifully restored and encoded 1080p image alongside some excellent extra features. These include a commentary, a visual essay about Lang's career, and short interviews with Hollywood heavyweights Martin Scorsese and Michael Mann about the film.

★★★★½

Rawhide

Signal One → Region B BD £15



The assistant manager of a remote stagecoach station, plus a stranded female passenger and her infant daughter, are held hostage by outlaws planning to rob a gold shipment arriving the next day in this 1951 flick that's an enjoyable mix of Western and film noir. While not a giant of either genre, *Rawhide* has a pulp charm that's hard to deny (Quentin Tarantino is clearly a fan judging by the way he reworked elements of it in *The Hateful Eight*). In addition to a very good 1.37:1 1080p encode, this Blu-ray also sports a pair of featurettes and an insightful commentary.

★★★½☆

Two Rode Together

Eureka - Masters of Cinema Region B BD & R2 DVD → £20



A companion piece of sorts to his 1956 classic *The Searchers*, John Ford's underrated *Two Rode Together* (1961) paints an even bleaker and more pessimistic picture of the racism and hypocrisy in so-called 'civilised society'. The undoubted highlight of this Blu-ray release is the gorgeous 1.85:1-framed Full HD encode, which does an excellent job of restoring the film to its original Eastman Color glory. In addition to an LPCM mono presentation of the soundtrack, the disc includes a lossless isolated music and effects track. A trailer and new video essay (both 1080p) are also present.

★★★½☆

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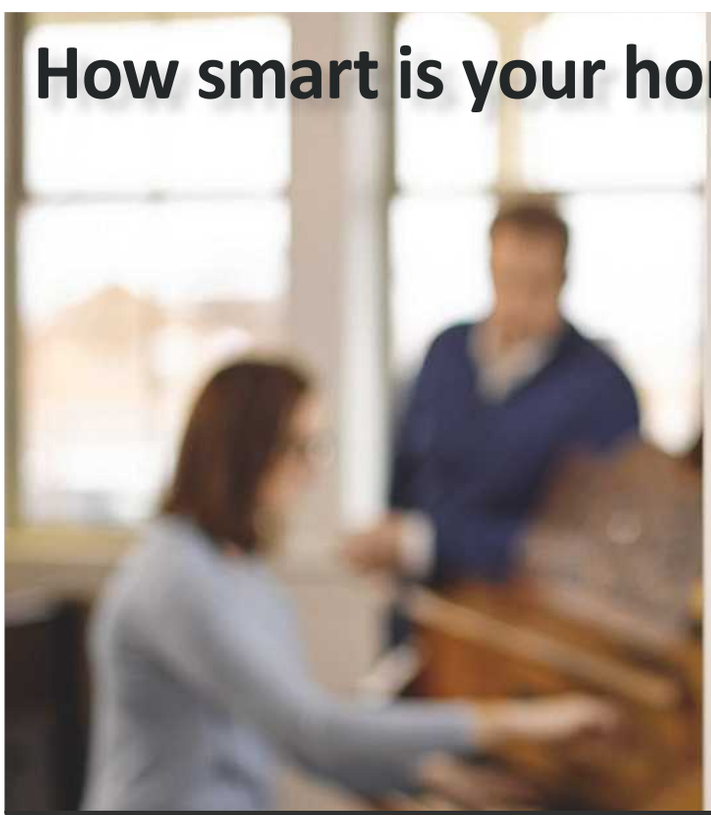
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'I don't have a gun, but I can make a pretend one if you like'



Conjuring 4K excellence

Rowling's new tale benefits from some Ultra HD and HDR magic



Redmayne will be back as Newt Scamander in a sequel in 2018

HCC VERDICT

Fantastic Beasts and Where to Find Them

➜ Warner Bros. ➜ All-region UHD BD & All-region BD ➜ £35

WE SAY: A lively return to the Potterverse on a fantastic 4K Blu-ray release.

Movie: ★★★★☆
Picture: ★★★★★
Audio: ★★★★½
Extras: ★★★☆☆
OVERALL: ★★★★½

➜ Fantastic Beasts and Where to Find Them

Director David Yates earned praise for his handling of the final four films in the *Harry Potter* franchise, so was surely a shoo-in to helm this spin-off flick, adapted for the screen by original author J.K. Rowling.

Eddie Redmayne leads the cast as Newt Scamander, a British 'magizoologist' visiting New York in the 1920s who, due to some lacklustre security on his dimension-expanding suitcase, accidentally unleashes some magical beasties. He's quickly trying to herd them up, aided by a Muggle, while avoiding the attention of the local magical authorities.

Now, if this all sounds like the sort of whimsical, FX-heavy frivolity that turned you off the *Harry Potter* franchise, then *Fantastic Beasts* won't appeal. On the other hand, Rowling fans will lap this up, and it's good to see the elements and themes of her Potter universe matched to a different, unrelated story, with a solid cast (including Colin Farrell, Jon Voight, Johnny Depp and Samantha Morton), holding its own amidst the CG creations. Expect plenty of sequels.

Picture: *Fantastic Beasts...* on UHD Blu-ray is apparently derived from a 4K rather than 2K digital intermediate (although actually lensed at 3.4K), and certainly looks a cut above much of the UHD competition. The clarity of the image is first-rate, with plenty of subtle details in foreground elements and backgrounds that invite you to peer into the screen. It's eye-opening stuff, and joined by brilliant use of HDR highlights and expressive colours. The palette looks natural, but ranges wide from sparkling golds to rich blacks.

Audio: There's a very active Dolby Atmos mix here, although use of the height dimension isn't too noticeable at first, outside of localised atmospheric effects such as the pneumatic tubes whizzing above the MACUSA HQ. Yet the sound design becomes more involved and aggressive as the film progresses. The encounter with the serpentine Occamy (Chapter 9) is a clear highlight, while Newt's use of the Swooping Evil in an escape bid (Chapter 8) showcases convincing panning effects around all the channels. Bass response is also wonderfully potent – the rhino-like Erumpent in the Central Park Zoo makes its presence felt...

Extras: There's a reasonable bunch of extras all housed on this release's 1080p Blu-ray: deleted scenes, various featurettes analysing design and the beasties themselves, and a look at how the movie was conceived. Worth a shufti.



Adding fine detail to the fur

Natural history and 4K make great bedfellows if this BBC release is anything to go by

➜ Planet Earth II

Just when you thought the world's natural wonders had already been thoroughly plundered by heaps of previous nature documentaries, *Planet Earth II* comes along with a new box of technological tricks to make your jaw hang open all over again.

All six episodes of the BBC's groundbreaking series are fascinating, and hold up well to repeated viewing. What guarantees you'll want to do that, though, is the unadulterated glory of the picture quality on this UHD BD release...

Picture: The high dynamic range and wide colour gamut hits you first. The image on the BBC's 4K platter looks much brighter and, crucially, more like the real world than the standard HD version. You really feel like you're on an Indonesian island with Komodo Dragons, or on a mountain with feuding eagles. Which you most likely aren't.

Almost the whole picture frequently radiates HDR brilliance, rather than just small isolated highlights as often happens in movies. The HDR/wide colour gamut mix also gives you an appreciation of the vibrant saturations of some of the dazzling birds and animals the natural world abounds with. And you can see more subtlety and variance in the feathers/fur of less colourful creatures.

The image typically enjoys a strong amount of extra detail beyond the normal Blu-ray. One or two sequences – such as the scene where the bears emerge from hibernation – do look suddenly soft, as if upscaled from HD, or cropped too aggressively from within an originally much wider 4K shot. Such moments are rare, though.



'Are you sure you left the car round here?'

More of a disappointment is that the UHD BD deploys a 24p frame rate rather than the 50Hz rate used on the HD disc, apparently to save the BBC from having to master different versions for international markets. This results in noticeable judder during tracking and panning shots.

Audio: Stellar visuals are partnered with a DTS-HD 5.1 soundtrack that envelops you in Hans Zimmer's score nicely, but isn't particularly interested in deploying ambient effects.

Extras: The only extra features are found on the HD Blu-ray, and comprise the *Making of...* segments shown after each broadcast episode. These are all good, but we'd have liked something more in-depth.

HCC VERDICT

Planet Earth II

➜ BBC Worldwide ➜ All-region Ultra HD BD & Region B BD ➜ £30

WE SAY: Despite sticking with a 24p frame rate, *Planet Earth II* remains a reference-grade UHD disc.

Movie: ★★★★½
Picture: ★★★★★
Audio: ★★★½☆
Extras: ★★★☆☆
OVERALL: ★★★★☆

Resident Evil: Afterlife

Sony Pictures ➜ All-region UHD BD & All-region BD ➜ £30

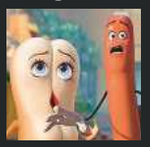


There was a time when the *Resident Evil: Afterlife* BD practically lived in the *HCC* player due to its cracking 3D presentation. That was years ago – now it debuts on 4K Blu without the aid of stereoscopy, but with the aid of a more pixel-rich feel, crisper highlights and a slightly different, cooler colour grade, not to mention an Atmos remix that has plenty of fun with Paul WS Anderson's frequent camera acrobatics. Extras (including a non-functioning MovieIQ mode) remain on the 1080p 2D disc. A worthwhile release, but this movie was always meant to be seen in 3D...

★★★★½

Sausage Party

Sony Pictures ➜ All-region UHD BD & All-region BD ➜ £30



Seth Rogen's adult-themed animation is bolstered on UHD Blu-ray by the addition of a Dolby Atmos mix, instead of the more constrained DTS-HD 5.1 track of its 1080p partner. This may be the key reason to re-buy, as 4K/HDR additions in clarity, shadow detail, contrast and colour aren't exactly revelatory. That's not to say the 'toon doesn't look good – there's a nice sense of depth to the environments and tiny details to the character models – but it's still not an animation showcase. All extras (and there aren't many) are found on the Full HD disc.

★★★★½

The Town

Warner Bros. ➜ All-region UHD BD & All-region BD ➜ £30



More randomness from Warner's back-catalogue – rather than give us *Gone With the Wind* in 4K, we get Ben Affleck's gritty Boston-set crime drama. The good news is that this enjoyable movie gets a 2.40:1 UHD HDR image that shows improvements in contrast and textures, although, as with *Argo* (another Warner/Affleck joint), it's never a jaw-dropping upgrade. Audio remains the DTS-HD MA 5.1 mix of the original BD release, while extras here are housed on the 1080p platter, including the option of watching an extended cut.

★★★★★

Collecting...

Movie prequels

Rogue One: A Star Wars Story continues the Tinseltown trend of films that step back in time to bring a fresh twist to a familiar story – ***Team HCC*** picks 10 more that are worth a spin on BD

X-Men: First Class



After three films and a Wolverine spin-off, Fox took its *X-Men* franchise into prequel territory in 2011 with this Cold War-era caper featuring James McAvoy and Michael Fassbender as youthful chummy versions of future enemies Professor X and Magneto. And with Matthew Vaughn replacing Brett Ratner in the director's chair, it proved a wise move – *First Class* delivers a thrilling, well-constructed superhero flick that's a vast improvement on the rather turgid *X-Men: The Last Stand.*

Get it: Fox's 4K Blu-ray release isn't exactly a flag-flyer for the format (the more recent *X-Men: Apocalypse* is a much better bet for those looking for HDR demo material), but remains the obvious choice if you have a compatible system.

TOP PICK



The Godfather: Part II

Often cited as the best movie sequel ever, Francis Ford Coppola's mafia epic also doubles as a part-prequel, intercutting its present day story with scenes of a young Vito Corleone arriving in New York, learning the ropes of street hustling and returning briefly to Sicily to extract revenge on mob boss Don Ciccio. It's a brilliantly executed twist, aided by Robert De Niro's ice-cool acting.

Get it: The trilogy is available in a Blu-ray boxset, while Sky Q owners can watch in Ultra HD.



Twin Peaks: Fire Walk With Me

Panned on its original release by those expecting something more in line with quirkier elements of his cult TV show, David Lynch's cinematic prequel is a far darker beast; a brooding and bleak nightmare of suffering that's actually one of the most audacious and challenging horror films of the 1990s.

Get it: The *Twin Peaks: The Entire Mystery* Blu-ray boxset includes a stunning restoration of the film, plus more than 90 minutes of deleted/extended scenes.



Escape From the Planet of the Apes

Fleeing the destruction of their world at the end of *Beneath the Planet...*, three intelligent apes are thrown back in time to Los Angeles, circa 1973 – where they end up putting in motion the events that will one day lead to the ape revolution that makes a monkey out of Charlton Heston some 2,000 years later. Clever.

Get it: All eight *...Apes* films reside in Fox's *Primal Collection* BD boxset.



Minions

Universal's *Despicable Me* 'toon notionally had Gru as its cast headliner, but his minions were clearly the breakout stars, so a spin-off was perhaps inevitable. *Minions* tells the tale of how the goggle-eyed nonsense-talking henchmen eventually find a home serving their supervillain boss, by way of ancient Egypt and swinging '60s London.



Get it: 2D/3D encodes are joined on the BD by Atmos audio and throwaway extras.



Monsters University

Twelve years passed before Pixar released a prequel to its excellent 2001 animation *Monsters Inc* – happily, *Monsters University* delivers more of the same cute, cuddly, family fun, which came as a relief to anyone still traumatised by 2009's *Up*. Charting the formative friendship of scarers Mike and Sully, it successfully leads into the original while delivering all sorts of important life messages to little AV-Holics.

Get it: Treat your setup to a reference-grade (and gorgeously colour-rich) Blu-ray image on Disney's 2D/3D double-pack.



Prometheus

Ridley Scott's prequel movie (to his 1979 classic *Alien*) baffled many viewers by hiding any direct links to that flick amidst its tale of creationist ETs and batty androids. Yet it abounds with nudges and winks to future events (including chestbursting beasties), and fleshes out the universe that would eventually be memorably expanded by James Cameron, David Fincher and others.

Get it: The 3-Disc Collector's Edition houses 2D and 3D versions, plus an exemplary selection of extras.



The Good, The Bad and The Ugly

Another prequel more in spirit than in narrative. Clint Eastwood's The Man With No Name (here nicknamed Blondie) picks his way through the American southwest during the Civil War in pursuit of a fortune in looted gold. Although the last film in Sergio Leone's brilliant 'Dollars' trilogy, it's clearly set in advance of earlier movies – and eagle-eyed watchers will spot Clint acquiring *that* legendary poncho.

Get it: A 50th Anniversary Ed. out later this year will hopefully make up for some mediocre BD releases that fans have put up with.



Dominion: Prequel to The Exorcist

Made by Paul Schrader as a prequel to the 1973 horror, but then not released – instead another director (Renny Harlin) was asked to cook up a more fan-pleasing movie (*Exorcist: The Beginning*). When that flopped at cinemas in 2004, Schrader was allowed to polish up his darker, more cerebral version for its own theatrical outing a year later. Confused? You've every right to be.

Get it: *The Exorcist – Complete Anthology* houses both prequels plus the original trilogy.

Oz The Great and Powerful

The 1939 adaptation of *The Wizard of Oz* skimmed over the backstory of its eponymous character, which was slight even in L. Frank Baum's original novel – it took until 2013 for Disney to put that right. Sam Raimi directs James Franco (as 'magician' Oz) in an enjoyable fantasy flick that perhaps really stands out courtesy of its 3D presentation, which at the time of release set a new benchmark for stereoscopic AV, and still ranks among the very best. Crucially, it succeeds in making the 'flat' iteration feel less involving. Switching sound design and aspect ratios – an homage to its 4:3 monochrome predecessor – add to the fun.

Get it: Stick Disney's 3D/2D Blu-ray release in your basket for premium AV thrills.



Have we missed one of your favourite cinematic prequels? Let us know: email letters@homecinemachoice.com

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HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed

TOP 10 Televisions

1 

Sony KD-65ZD9 → £3,500
★★★★★

Sony finished 2016 on a high with this full-array LED Bravia (with advanced local dimming tech) that claims a 1,800-nit peak brightness. Cinematic, sublime pictures – and Dolby Vision support is a firmware update away. *HCC #267*

2 

Panasonic TX-65DX902 → £2,300 ★★★★★
This HDR-capable 65-incher wears its Ultra HD Premium badge with pride, and employs a full-array backlight to take control of its impressive luminance talents. Imagery is excellent. *HCC #259*

3 

LG OLED65E6 → £3,500 ★★★★½
The sweetspot in LG's OLED range below the Signature G6 – most will consider the tweaked bezel design and inferior sonics of this TV worth settling for considering the price. *HCC #265*

4 

Samsung UE65KS9500 → £2,800 ★★★★½
Replacing the edge LED system of the KS9000 with a direct array yields illumination improvements. Colour-rich, super-bright visuals and smart design. Lacks 3D support. *HCC #265*

5 

Philips 55POS901F → £2,800 ★★★★½
Philips enters the OLED arena with a screen that stands out courtesy of its alluring performance and Ambilight. But it lacks the smart skills and 3D playback of some rivals. *HCC #270*

6 

Samsung UE55KS7000 → £1,000 ★★★★½
Straddling the world between genuine budget sets and more premium competitors, this 55-incher is perhaps Samsung's most appealing model. Impressive with both SDR and HDR. *HCC #265*

7 

Sony KD-55XE9305 → £2,400 ★★★★☆
This Android 4K LED model hits the highs when it comes to brightness and colour impact, leading to some stellar HDR visuals. Yet the edge LED lighting shows some flaws. *HCC #271*

8 

Panasonic TX-50DX750 → £800 ★★★★☆
Mid-range 4K/HDR LED TV. Not as impactful as its DX902 stablemate when it comes to pictures, but a neat design, fun UI and appealing screen size will win it plenty of fans. *HCC #260*

9 

Hisense 75M7900 → £2,500 ★★★★☆
A massive 75in LED set at a bargain price. The appeal is its largescreen 4K playback: a lack of innate brightness and colour subtlety hampers HDR performance. *#267*

10 

Hitachi 49GHT69U → £500 ★★★½☆
49in 4K screen that could appeal to those on tight budgets. This £500 set offers a smattering of catchup, decent connectivity and a generally enjoyable image. No HDR support, though. *HCC #260*

TECH INFO: TELEVISIONS



4K is here to stay: The TV market is currently dominated by LED-lit LCD screens – plasma is long gone – but OLED is gaining a share as more brands adopt the self-emissive screen technology. 4K/Ultra HD models are now commonplace on displays above the 40in mark, which is where you should be looking for home cinema thrills. Curved models were once achingly trendy, but we're seeing a shift away from such design flourishes. Look out for sets offering support for HDR content, which is part of the UHD Blu-ray specification.



Active or Passive: At the beginning of the 3D era, most TVs featured the active system that uses powered 3D specs to deliver full-res images to each eye. Passive 3D TVs, which are now more common, have a filter over the screen and use non-powered specs with polarising filters. The glasses are cheap as chips, but the resolution of Full HD 3D is halved to 540 lines horizontally (but remains at 1,920 vertically). The same halving occurs with a 4K screen. 3D playback is increasingly being dropped by brands (including Samsung and Philips). Glasses-free 3D, heralded by Toshiba's early ZL2 TV, hasn't caught on. The tech is still being worked on, though...

TOP 5 Blu-ray movies



Star Trek Beyond 3D
A rousing Dolby Atmos mix and oh-so-deep stereoscopic 2.40:1 encode make this enjoyable sci-fi adventure a fine AV demo disc. Paramount loads the 1080p BD platter with plenty of informative extra features, too.
★★★★½



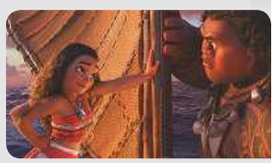
The Magnificent Seven [Ultra HD Blu-ray]
Yee-haa! This sharp-shooting Western remake rides out on 4K Blu-ray with blisteringly sharp, sun-baked HDR visuals and an impressively precise Dolby Atmos soundmix.
★★★★☆



Doctor Strange 3D
Marvel's latest superhero film takes a trip to the weirder side of the MCU and in doing so conjures up an eye-popping stereoscopic encode accompanied by thrilling DTS-HD MA 7.1 sonics. Could it be magic? Absolutely!
★★★★☆



Deepwater Horizon [Ultra HD Blu-ray]
Tense, explosive 'docbuster' that reunites Mark Wahlberg with *Lone Survivor* director Peter Berg. Lionsgate's 4K disc offers a breathtaking Atmos soundmix and flaming HDR visuals.
★★★★½



Moana
Disney's seafaring adventure makes an almighty splash on Blu-ray with richly saturated 2.40:1 1080p imagery and bass-rich DTS-HD MA 7.1 soundtrack. AV prowess is backed up by a typically strong set of extras.
★★★★½

TOP 10 Blu-ray & Ultra HD Blu-ray players

1



Oppo UDP-203 → £650
★★★★★

Oppo refreshes its player hardware with a superb universal design with Ultra HD playback (including Dolby Vision via firmware later this year). Packed with user adjustments and connectivity. No apps or Darbee Vision, though. *HCC #269*

2



Panasonic DMP-UB900 → £600 ★★★★★
The Ultra HD Blu-ray format got an inspiring debut in Panasonic's multi-talented deck that offers a sterling picture performance and 4K-enabled VOD apps. *HCC #259*

3



Pioneer BDP-LX88 → £1,100 ★★★★★
The Japanese corp returns to the disc-playing high-end with a universal deck that weighs more than your AVR and drips with user tweaks and processing features. Stonking performer. *HCC #246*

4



Oppo BDP-105D → £1,100 ★★★★★
This heavyweight deck builds upon the premium picture performance of the BDP-103D with a wealth of audiophile upgrades – if you're serious about music, check it out. *HCC #234*

5



Sony UHP-H1 → £400 ★★★★★
Its last top-line BD deck before Sony embraces UHD, this player pleases with wide-ranging audio support (including DVD-A!), exquisite construction and slick performance. *HCC #261*

6



Panasonic DMP-UB700 → £300 ★★★★½
Shorn of some of the audiophile niceties of the UB900 (including multichannel analogue outputs), but still a safe pair of hands with your 4K BDs. And at a bargain price. *HCC #270*

7



Arcam FMJ UDP411 → £1,200 ★★★★½
Pristine visuals – including upscaled SD – and a classy sonic performance grant this Arcam instant appeal. The design and build is commensurate with the premium price tag. *HCC #244*

8



Samsung UBD-K8500 → £430 ★★★★☆
Ultra HD Blu-ray player that'll find fans courtesy of its sensible price point, connected smarts and eye-catching visuals. Build quality is a little uninspiring. *HCC #260*

9



LG BP556 → £85 ★★★★☆
LG's top-of-the-line(!) disc-spinner is actually a budget offering. Design is a bit garish, but the addition of multiroom streaming, some smart apps and file playback sweeten the deal. *HCC #266*

10



Samsung BD-J7500 → £150 ★★★★☆
This well-priced spinner offers twin HDMI outputs and multichannel phono audio for flexible system hookup, an appealing design, smart features and solid AV chops. *HCC #247*

TECH INFO: BLU-RAY PLAYERS

Matching your deck to your AV receiver: Blu-ray decks are designed to deliver top-notch images but Blu-ray is also about enjoying superior quality sound. When choosing a player, bear in mind the connectivity and decoding features of your AV receiver.
If you're still using an older model that doesn't offer HDMI inputs, then you'll need a Blu-ray player with multichannel analogue audio outputs to enjoy decoded hi-res surround sound formats. Similarly, older but still HDMI-equipped receivers may not be able to cope with 3D/4K/HDR output signals, in which case you'll need a deck with dual HDMI outputs – one channelling audio to your receiver amp, the other piping video direct to your TV.

What about consoles?: Both Sony's PlayStation and Microsoft's Xbox platforms support Blu-ray playback – the latter's Xbox One S will even spin your Ultra HD Blu-ray platters. Using a console can be an affordable alternative to a deck, particularly when gaming and media playing talents are taken into account, but the joypad user experience can feel a little odd and you'll need to make sure no one else is playing *Grand Theft Auto* first.



DEMO DELIGHT

Billy Lynn's Long Halftime Walk: Ang Lee's post-Gulf War drama isn't exactly a cracking film, but as the world's first 60fps 4K Blu-ray title it gives you a chance to sample high-frame-rate home cinema. Will you like it? That's not for us to say...

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TOP 10 Projectors

1 

Sony VPL-VW550ES → £9,000
★★★★½

For its top-range domestic SXRD beamer, Sony introduces an HDR Contrast tool that proves useful in fine-tuning its UHD Blu-ray performance. Excels with standard BD content and setup flexibility, too. *HCC #269*

2 

JVC DLA-X7000 → £5,700 ★★★★½
With contrast and brightness improvements over the more affordable DLA-X5000, this is a great bigscreen option, although its SDR performance impresses more than HDR. *HCC #259*

3 

Sony VPL-HW45ES → £1,850 ★★★★½
The most affordable model in Sony's home cinema range, the Full HD-resolution 45ES features excellent light management for a routinely cinematic image. Great value. *HCC #263*

4 

JVC DLA-X5000 → £4,000 ★★★★☆
Fourth-gen eShift projector marries its pixel-shifting talents with a contrasty performance, HDR support and HDMI 2.0a. Not the smoothest with motion, and price tag is considerable. *HCC #257*

5 

Epson EH-TW6300 → £1,300 ★★★★☆
HDR and 4K scaling are off the menu, leaving this mid-range model to concentrate on cinematic HD images. Bright, crisp performance, plenty of tweaks, but no 12V trigger. *HCC #271*

6 

ViewSonic Pro7827HD → £600 ★★★★☆
Pictures impress from this single-chip DLP budget option that carries a third HDMI input designed for smart sticks. Includes ISF calibration. 3D spex are an optional extra. *HCC #261*

7 

Epson EH-TW9300 → £3,000 ★★★★☆
Epson brings HDR playback and 4K up-rezzing to an agreeable price tag. Colourful and well-contrasted visuals, but don't expect an HDR knockout. *HCC #266*

8 

Epson EH-TW7300 → £2,200 ★★★★☆
Similar performance traits to its bigger brother (above), but with reductions in max brightness (and claimed contrast). Currently the most affordable HDR model around. *HCC #269*

9 

Optoma GT5000 → £1,000 ★★★★☆
Ultra short-throw model with healthy brightness that makes sense for regular living rooms where a traditional install isn't possible. Casts Full HD images from just 30cm. *HCC #261*

10 

BenQ W2000 → £800 ★★★★☆
Average black-level performance limits this model's all-round appeal, but elsewhere this Full HD DLP budget PJ catches the eye with its calibration options and detailed visuals. *HCC #257*

TECH INFO: PROJECTORS



Installation: Although projectors can be temporarily placed on a cupboard, stand or shelf situated at the rear of the room (use the adjustable feet on its base to level the image so that it aligns with the screen), a much better long-term solution is to mount it on your ceiling with an appropriate bracket. Projectors can be quite heavy, though, so it's important to ensure that the bracket is attached firmly – ideally, it should be secured to a joist. Position your PJ so that an imaginary line from its lens to the opposite side of the room hits the screen exactly half-way along its width. The location of your screen should therefore dictate where your projector is. A decent tape-measure or laser pointer will help you to determine the position.

Throw distance: Throw distance specifies the distance between the projector and screen for a focused image of given size. As the vast majority of projectors are equipped with a zoom lens, minimum and maximum throw distances are often specified – say, 3.01m to 6.08m for a 100in. 16:9 image. Shorter throw distances are ideal for smaller rooms, and longer ones for larger rooms. Simple.

Throw ratio: Sometimes, a manufacturer will quote a throw ratio rather than a throw distance. This is basically the throw distance divided by the image width. To get the projected image size, divide the distance between projector and screen by the specified figure. Once again, the inclusion of a zoom lens means that upper and lower figures are usually specified.

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TOP 10 Speakers

1 

Monitor Audio Gold 300AV → £7,150
★★★★★

MA revamps its Gold Series and we pay serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. *HCC #251*

2 

Q Acoustics 3000 5.1 Cinema Pack → £700 ★★★★★
A superior compact package with driver improvements over the previous 2000i series. The two-way cabinets and dual-driver sub combine to offer impressive audio for the money. *HCC #247*

3 

XTZ Cinema Series 5.1.4 → £3,700 ★★★★★
Spectacular dynamics, gut-thumping bass and a sense of scale that most systems at this price only dream of – XTZ's 3D audio-ready setup is an easy recommendation. *HCC #259*

4 

KEF R Series 7.1 → £6,500 ★★★★★
A 7.1 array mixing dipolar and direct surrounds, this authoritative package takes its cues from KEF's Blade concept speaker and offers faultless, largescale home cinema sonics. *HCC #217*

5 

Monitor Audio Bronze B5 AV → £1,500 ★★★★★
Like their Gold siblings, these feature switchable surround speakers and MA's C-CAM drivers. Smaller in stature and output, but eminently more affordable. *HCC #254*

6 

ELAC Debut 5.1.2 → £1,950 ★★★★★
Well-priced floorstanding Atmos system that manages to balance subtlety and precision with an exciting delivery. Subwoofer includes app-based room EQ. *HCC #262*

7 

DALI Opticon 5.1 → £3,200 ★★★★½
The Opticons employ driver designs created for DALI's higher-end models, and showcase a talent for both involving music presentation and high-octane home cinema. *HCC #260*

8 

Dynaudio Emit 5.1 → £3,200 ★★★★½
Entry-level for Danish brand Dynaudio – still a hefty chunk for a 5.1 array. What the money gets you is a wonderfully natural and cohesive soundstage and stonking build quality. *HCC #263*

9 

Wharfedale DX-1SE → £400 ★★★★☆
Delightfully compact 5.1 package (although with two-way satellite speakers) that blends a tidy design with crisp surround sonics at a very tempting price. *HCC #267*

10 

Quad S Series 5.0 → £1,800 ★★★★☆
Standmount speakers with ribbon tweeters join together in a multichannel pack with a smooth, detailed and unfatiguing sound. Neat design and build. Just add a subwoofer. *HCC #271*

TECH INFO: SPEAKERS



Centre speaker: Handles most of the dialogue and onscreen effects. Should be positioned above or below the screen as close to it as possible. Of course, if you're using a projector screen, it should ideally be placed behind it.

Front speakers: Left and right speakers should be positioned either side of the screen, in line with the centre. Turn the speakers in slightly to face the listener if there isn't an even movement of sound across the front of the room.

Subwoofer: Can be positioned wherever it sounds best or can be tucked out of sight due to the non-directional nature of low-frequency signals. Be aware that close positioning in corners or next to walls can create a boomy effect.

Surrounds: Position alongside the listener, pointing in or slightly behind the ears for a good surround effect. The back wall is not a good position for surrounds – it is, in fact, where you should locate the sixth and seventh speakers (rears) in a traditional 7.1 array.

DEMO DELIGHT

Deepwater Horizon: Based on the real-life oil rig disaster in 2010, this good-looking thriller starring Mark Wahlberg features a terrifying Dolby Atmos soundmix on both its Full HD and 4K Blu-ray releases. Placing you right in the centre of the unfolding chaos through precise effects placement and fabulous dynamics, it's, er, very slick...

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TOP 10 AV Receivers/AV Processors

1 

Anthem MRX 1120 → £4,000
★★★★★

Combining Anthem's superb ARC room EQ system with 11-channel amplification makes this an essential consideration for full-spec Atmos setups. Muscular, precise sound. No networking skills, though. *HCC #265*

2 

Arcam AVR850 → £4,500 ★★★★★
High-end seven-channel AVR marrying Class G amplification and Atmos (and future DTS:X) support with talented Dirac Live Room EQ. 11-channel pre-outs for full-fat setups. *HCC #257*

3 

Denon AVR-X4300H → £1,300 ★★★★★
Nine-channel receiver with HEOS multiroom integration and 11-channel processing (Atmos, DTS:X, plus Auro-3D as a paid-for upgrade). Great, detailed sound and foolproof usability. *HCC #267*

4 

Trinnov Audio Altitude32 → £27,000 ★★★★★
Capable of outputting 32 discrete channels and mapping Dolby Atmos, DTS:X and Auro-3D sources to any setup via advanced EQ. Only premium cinema owners need apply, though. *HCC #262*

5 

Denon AVR-X2300W → £500 ★★★★★
This almost entry-level Denon offers excellent value for money, with a well-balanced sound signature and bulging feature set. Seven-channel design won't suit all setups. *HCC #263*

6 

Yamaha RX-A3060 → £2,000 ★★★★½
New nine-channel flagship from Yamaha features excellent room EQ implementation, well-judged DSP modes, and an even-handed, effortless sound. *HCC #264*

7 

Denon AVR-X6300H → £2,000 ★★★★½
Denon bundles 11 channels of power, plus cutting-edge features, into this crisp, articulate AV receiver. Ideal partner for 7.1.4 setups, but not quite the muscle-monster you might expect. *HCC #269*

8 

Marantz NR1607 → £600 ★★★★½
The latest slim-line AVR from Marantz continues the brand's good work when it comes to space-saving sonics. Seven-channel amp with object-based audio. Punchy, lively sound. *HCC #266*

9 

Pioneer VSX-1131 → £550 ★★★★½
Seven-channel model with Atmos and DTS:X support that features an overhauled remote control and UI to improve usability. Bass-rich, energetic sound. *HCC #265*

10 

Yamaha RX-A860 → £900 ★★★★☆
Only seven channels and hindered by only three HDCP 2.2-enabled HDMI inputs, but beyond that this flexible MusicCast AVR proves a great listen, with plenty of DSP toys. *HCC #270*

TECH INFO: AV RECEIVERS



Tackling new heights: A recent innovation in AVR circles is the introduction of Dolby Atmos, the object-based sound format that has taken off in commercial cinemas and is supported in the home by the likes of Onkyo, Pioneer, Denon, Marantz and Yamaha. This requires new height speakers in addition to a regular 'flat' 5.1 or 7.1 speaker configuration. The heights can either be physically mounted in/on your ceiling, or provided via up-firing reflective models. Setup can be complex, but the results are certainly impressive. Atmos-encoded Blu-rays are a bit thin on the ground, but you can use Dolby Surround post-processing with regular 5.1/7.1 soundtracks to get the most from your new AVR/speakers. Rivals to Atmos are Auro-3D, which uses height speakers in a different configuration, and DTS:X. Most AVR brands have pledged support for the latter; software isn't as widespread as Atmos.

How much power?: Many of the mass-market AV receiver manufacturers are involved in a specifications race to see who can say their model is the most powerful, which can be confusing for consumers. For instance, both Krell's £7,000 S-1500 seven-channel power amp and Yamaha's £500 RX-V675 both claim 7 x 150W – the important part is that Krell's figure is into an eight-ohm load with all channels driven, and that Yamaha's is with one channel into a four-ohm load, which is hardly a real-world situation. The best advice is ignore the numbers game and get a demo of your desired AVR with the same, or similar, speakers that you intend to partner it with.

TOP 5 Bonus features



Sam Peckinpah: Man of Iron – The Director's Cut
Arrow Video bolsters its *Bring Me the Head of Alfredo Garcia: Limited Edition* Blu-ray with over 10 hours of extended interviews shot for Paul Joyce's fascinating TV doc about the film's director.
★★★★★



Star Wars: The Force Awakens commentary
Director JJ Abrams provides a trivia-packed chat track on the Collector's Edition Blu-ray release of Disney's box office killer. Indispensable for *Star Wars* geeks.
★★★★½



Napoleon: Triptych
On a package that also features a remarkable five-hour commentary track, the option to watch the movie's three-panel footage on three displays (via three discs) is the icing on the cake.
★★★★★



The Giant's Dream
Superior hour-long documentary on *The Iron Giant*'s Signature Edition Blu-ray that is refreshingly honest about the toon's production and its now-famous box office failure. Brilliant stuff.
★★★★★



You're so cool, Brewster!
Fan-pleasing 147-minute retrospective *Fright Night* documentary (edited down from an original much-longer crowd-sourced movie) featuring exclusive interviews and plenty of production nuggets.
★★★★☆

TOP 10 Subwoofers

1 

SVS SB-2000 → £600 ★★★★★

This follow up to the SB-1000, which incorporates a new 12in driver and revamped Sledge DSP amplifier, offers immense value for money. A mid-sized woofer that imbibes your Blu-rays with potent LFE, the SB-2000 sounds quick and taut, and is a perfect introduction to what a truly good sub can accomplish. *HCC #233*

2 

REL No.25 → £6,500 ★★★★★
REL celebrates its 25th anniversary in style with this 15in/1,000W premium concoction that exhibits exhilarating speed and nuance down to serious depths. Big, but beautiful. *HCC #271*

3 

JL Audio Fathom f212v2 → £6,500 ★★★★★
A second-gen outing for JL's 2 x 12in monster, with an increase in power (now 3,600W) and improvements to the room EQ system among the changes. Sounds as good as you'd imagine. *HCC #261*

4 

SVS SB16-Ultra → £2,500 ★★★★★
A big driver (16in) and 1,500W amp combine to give SVS's flagship sealed sub real appeal. Goes low while sounding tight and fast. App-assisted EQ and operation. *HCC #270*

5 

REL S/3 SHO → £1,450 ★★★★½
The 10in, 400W S/3 is part of REL's revamped 'Super High Output' Serie S line. Performance is excellent, with speed, control and a scale bigger than you might expect. *HCC #264*

6 

BK Electronics P12-300SB-DF → £475 ★★★★½
Bass heads can get outrageous value for money in the shape of BK's overperforming 12in sub. A front-firing model is also offered, and other finishes knock the ticket down to sub-£400. *HCC #247*

7 

ELAC SUB 2070 → £1,300 ★★★★½
A dual-driver, 600W sealed sub with control and onboard EQ system driven by a free Android/iOS app. Meaty, assured performance, with useful tweaks offered. *HCC #261*

8 

Eclipse TD520SW → £3,000 ★★★★½
This twin 8in woofer, driven by ICEpower amplification, aims for ultimate speed and tone – and succeeds. Simply put, the TD520SW is worth every penny of its asking price. *HCC #249*

9 

SVS PC-2000 → £800 ★★★★☆
The cylinder construction means this 12in, 500W design can boast a large cabinet but a relatively small footprint. Good value with weighty, slamming bass, but a little lacking in nuance. *HCC #267*

10 

Artison Nano 1 → £800 ★★★★☆
Artison's media room-friendly woofer tucks twin 6.5in bass drivers and a 300W amp into its compact frame. Bass extension isn't the deepest, but this is tight, fast and heaps of fun. *HCC #253*

TECH INFO: SPEAKERS



Why use more than one sub?: Using two subwoofers (or perhaps four) should, in theory, bring huge rewards in terms of bass performance. But remember that LFE is a tricky beast to control. Running two subs may simply double problems in your room like room boom and suck-outs, where outgoing and reflected bass sounds cancel each other out. If you have some flexibility in where you place subwoofers, trial and error may well throw up some interesting results. The acoustics wizard Floyd E Toole (his book *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms* is fine bedtime reading) suggests one LFE sub to either side of the room may be best for accuracy while placing them in the front corners would be best for overall bass power. Yet there is no hard and fast rule as to what will work best for every room, and you may find that simply using one (large) subwoofer is preferable as it's the easiest to get sounding right.

DEMO DELIGHT

Star Wars: The Force Awakens: Bass is a constant (phantom?) menace in Disney's *Star Wars* sequel, whether it's underpinning the complaining, rumbling engine of the Millennium Falcon, adding weight to frequent explosions or used to bring scale and depth to locations. It seeps into every element of the Blu-ray's DTS-HD MA 7.1 soundmix, meaning your subwoofer is called upon to put in a serious shift.

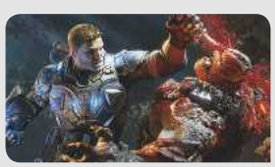
TOP 5 Console games



Call of Duty: Infinite Warfare
The sci-fi trappings may upset *COD* purists, but this is one of the series' best entries in years. The action-packed single-player campaign is a blast; multiplayer extends the fun.
★★★★½



Resident Evil 7: Biohazard
Moving from the familiar third-person perspective to a first-person view was always going to be a risk, but it pays off here with a terrifying return to the series' roots. PS4 Pro owners get enhanced resolution visuals.
★★★★★



Gears of War 4
A thrilling continuation of the Xbox action stalwart, with an absorbing, well-scripted single-player campaign and wonderfully colourful and vibrant visuals (with HDR on Xbox One S). Give it a spin!
★★★★★



Horizon Zero Dawn
Tomb Raider meets *Zelda* in this PS4-exclusive action-adventure pitting humans against massive mechanical beasts. Excellent gameplay, and the 4K visuals are perhaps the best reason yet to upgrade to a PS4 Pro.
★★★★★



Uncharted 4: A Thief's End
The final entry in this blockbuster franchise is simply epic, both in terms of gameplay (driving, puzzle-solving, stealth battles...) and the exquisite 1080p visuals. Roll on next year's movie adaptation!
★★★★★

TOP 10 Accessories

1



KEF R50 → £600 ★★★★★

KEF's Dolby Atmos-enabled reflective modules are a smart choice for anyone looking to beef up their speaker system. Using the company's Uni-Q point source drivers pays real dividends, enabling full-range sonics that reach deep into your cinema room. Styling and build quality are first rate. £600 gets you a pair – you'll soon want four... *HCC #252*

2



Amazon Echo Dot → £50 ★★★★★
Less impressive as a standalone speaker than its larger sibling, but a third of the price, and its 3.5mm output lets it work with third-party kit. Fun AI experience, and a real bargain. *HCC #269*

3



Nvidia Shield Android TV → £150 ★★★★½
The Android TV platform gets the hardware it deserves – this stylish set-top box offers potent processing, resulting in a slick gaming and media playback experience. 4K capable. *HCC #262*

4



Amazon Fire TV → £80 ★★★★½
Media streamer with impressive search functionality and plenty of content, including 4K Netflix and Amazon Video. HDR support would be nice, though. *HCC #270*

5



Logitech Harmony Elite → £270 ★★★★½
Flexible and relatively easy to set up, this all-in-one remote package combines touchscreen handset and hub with smart device app. Worthwhile if you have a stacked kit rack. *HCC #256*

6



Devolo Wi-Fi ac Repeater → £50 ★★★★½
Simple plug-based add-on that extends the range of your Wi-Fi network, and offers hardwired access. Could be just the ticket for your loft-based movie room. *HCC #269*

7



Xbox One S → From £250 ★★★★☆
The retooled Xbox One adds Ultra HD Blu-ray playback, 4K streaming and HDR gaming to the feature list. Available in 500GB/1TB/2TB versions. *HCC #264*

8



PSB Imagine XA → £350 ★★★★☆
These two-way Dolby Atmos-enabled upfiring speakers are fairly chunky, but work well at creating a height layer and the £350-per-pair ticket makes them an enticing option. *HCC #264*

9



DVDO iScan Mini → £275 ★★★★☆
HDMI 4K upscaler (using Silicon Image's VRS processing) that teases sharpness from HD and SD sources. A good fit for an entry-level or mid-range 4K TV. *HCC #264*

10



Sony PlayStation 4 Pro → £350 ★★★★☆
A mid-cycle upgrade of Sony's console brings 4K and HDR gaming, plus app streaming, but not UHD BD playback. Gorgeous gameplay is the USP here. *HCC #268*

TECH INFO: MEDIA PLAYERS



What about my TV?: Most flatscreen TVs from the major brands (Sony, Samsung, Panasonic, LG, Philips, Hisense, etc) also incorporate media player functionality, using Ethernet or Wi-Fi to stream from your home network, or from plugged-in USB drives. Most modern Blu-ray players offer this, too. However, file support is rarely as extensive as on dedicated devices from the likes of Western Digital and A.C. Ryan, and our experience shows some are more adept at playback from USB than over a network. Nor (obviously) is a TV or BD player portable. If your media collection extends beyond JPEGs and MP3s into lossless audio rips and esoteric HD video formats, then a standalone player is a good investment.

Storage: You can, if you really want, store all your files on a plethora of USB drives, or on your PC, but it's best to get a NAS (Network Attached Storage) device for simplified sharing of your media across a network with multiple players, such as one from Netgear's ReadyNAS range (pictured). These dedicated devices often offer RAID array file backup, and are managed via browser software. Storage capacity can be anything from 1TB to 12TB and beyond.



TOP 5 Blu-ray/DVD boxsets



Game of Thrones: The Complete Sixth Season
Another brilliant BD boxset for HBO's jewel in the crown. Atmos ensures AV thrills, and the story remains strong despite no longer being based on George R. R. Martin's source novels.
★★★★½



Doctor Who: The Power of the Daleks
Unseen since 1966, this missing BBC serial has been recreated using animation – with the choice of colour or black-and-white incarnations – and packs a TARDIS-load of extras.
★★★★☆



Lone Wolf and Cub
Criterion's handsome BD boxset brings together 2K restorations of the six films from the legendary Japanese swordplay franchise, alongside a similarly polished 1080p presentation of the US *Shogun Assassin* re-edit.
★★★★☆



Dissent and Disruption: Alan Clarke at the BBC (1969-1989)
Mega boxset with a mega price tag (£150) featuring a comprehensive collection of Clarke's work spread across 11 BDs and two DVDs.
★★★★★



The Hunger Games: The Complete 4-Film Collection
Ultra HD package with pleasingly crisp 2.40:1 encodes, new Dolby Atmos mixes for the first two movies and a bulging collection of extra features.
★★★★☆

TOP 10 Soundbars & Soundbases



1 Yamaha YSP-5600SW
→£1,900 ★★★★★

With its 46 drivers (including upfirers) this premium 'bar delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. *HCC #254*



2 Canton DM55 →£330 ★★★★★
Canton's smallest soundbase still delivers big sonic thrills. Twin woofers underpin clean and crisp mids and highs, and build quality is first-rate. Doddle to use. Bluetooth built-in. *HCC #260*



3 Samsung HW-K950 →£1,300 ★★★★★
Soundbar with additional wireless rears and Dolby Atmos support via four upfiring drivers. Impressively largescale performance, good connectivity. No native DTS support. *HCC #263*



4 Cabasse Stream BAR →£850 ★★★★½
Soundbar/hi-res speaker that's blessed with real musicality, but doesn't fall short when it comes to energetic film soundtracks. HDMI in/out, but v1.4 only. *HCC #269*



5 Q Acoustics M3 →£300 ★★★★½
A 4in x 6in woofer is tucked away in the M3's eye-catching angular chassis, ensuring this well-priced soundbar has a full-range performance. Simple to use. Bluetooth streaming. *HCC #271*



6 DALI Kubik One →£800 ★★★★½
The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound. *HCC #269*



7 Sony HT-RT5 →£500 ★★★★½
Sony joins the growing 'soundbar with wireless surrounds' market with an enjoyable debut that packs some worthwhile DSP modes and plenty of media-savvy functionality. *HCC #257*



8 Bluesound Pulse Soundbar →£1,000 ★★★★☆
Part of the Bluesound multiroom stable, this glam-looking soundbar offers audiophile tricks such as MQA streaming and a largescale, dynamic sound. Bit pricey, though. *HCC #270*



9 Acoustic Energy Aego Sound3ar →£200 ★★★★☆
Smallscale second-room option impresses with its punch and clarity, but a few EQ tweaks would have been nice. No HDMI connectivity. *HCC #264*



10 LG SH6 →£260 ★★★★☆
GoogleCast and HDMI join Bluetooth to make this soundbar well-connected. No sub, but there's a hefty low-end output via its driver array and impressive scale to its sonics. *HCC #270*

TECH INFO: TV PLATFORMS



TV addicts – go free, or pay-to-view?: The analogue switch-off has created a competitive market in free-to-air platforms, while Sky and Virgin Media are squaring up to the likes of EE TV, Amazon Prime and Netflix. Deciding which service is right for you can be complex, and you may find your needs are best catered for by a combination.

Sky+HD: The long-running satcaster offers a plethora of HD channels, with content including recent movie releases, live sports and sought-after US shows. The new Sky Q hardware includes a 4K-capable PVR with multiple tuners for simultaneous recording/device streaming.

Virgin Media TiVo: The cable giant offers a three-tuner PVR (1TB) with intelligent TiVo recording tricks, catch-up apps (including Netflix and Spotify), and over 240 channels (depending on package). Premium Sky content can be added on a monthly basis.

Freeview: Common option when it comes to TVs and STBs. Freeview offers 13 HD channels plus SD and radio. Freeview Play adds IPTV integration to the EPG – and you'll find it on Panasonic and Finlux TVs.

Freesat: Satellite service offering a similar – but not identical – channel lineup to Freeview, delivered via a dish but without a subs cost. Budget-priced STBs are available.

YouView: This relatively new kid on the block integrates the UK's main catchup portals directly into a backwards EPG. Again, channels are broadly similar to Freeview and there's no contract. Humax (PVRs) and Sony (TVs) are leading the hardware charge.

TOP 5 Back-catalogue Blu-rays



His Girl Friday
Criterion rustles up the definitive release of this 1940 Cary Grant/Rosalind Russell classic. Superb 1.33:1 monochrome transfer, plus a wealth of extras on this two-disc BD, including the 1931 flick *The Front Page*.
★★★★★



Bring Me the Head of Alfredo Garcia: Limited Edition
Arrow's two-disc release marries a stunning new 4K restoration of Sam Peckinpah's most personal (and misunderstood) movie to a treasure trove of bonus goodies.
★★★★☆



King Kong: Premium Collection
Fans will go ape for this HMV-exclusive platter of the classic monster movie, which lives up to its 'Premium Collection' billing thanks to an attractive encode and engrossing extras.
★★★★½



It Came From Outer Space
Universal unleashes this 1953 science-fiction classic on a fine-looking (and well-priced) 3D Blu-ray release. Audio thrills come via a DTS-HD 3.0 presentation of the original three-track soundmix.
★★★★☆



Crouching Tiger, Hidden Dragon
An assured 4K debut for Ang Lee's Mandarin-language martial arts drama. Sony Pictures' restoration work reaps rewards; a new Dolby Atmos mix is another reason to buy.
★★★★★

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TOP 5 PVRs



Virgin Media TiVo, £subscription
This triple-tuner PVR offers recording flexibility, useful features – you can undelete deleted shows! – and smart TiVo functionality. If you're in a cable area, consider it.
★★★★½



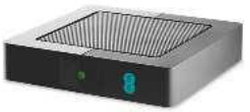
Sky Q, £subscription
Sky's new top-tier product offering dazzles with its image-rich user interface, wireless multiroom skills and recording flexibility delivered by the PVR's 12 tuners. Now supports 4K content.
★★★★★



Humax HDR-1100S, £190
Freesat Freetime PVR that impresses with its usability, VOD options and form factor – Humax's small, white box will slot into any kit rack. We tested the 500GB version – 1TB and 2TB models are also available
★★★★½



Humax DTR-T4000, £subscription
This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage
★★★★½



EE TV Smart Box £subscription
This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though
★★★★☆

TOP 5 Headphones



Sony MDR-HW700DS, £800
Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb – great for late-night listening
★★★★★



Sony MDR-1000X, £360
Superior noise-cancelling cans with hi-res audio support via Sony's LDAC wireless transmission tech. Slick, touch-sensitive operation and healthy battery life. Fulsome sound and comfy to wear
★★★★½



Lindy Cromo NCX-100, £100
A cost-effective domestic option and great for travelling, these noise-cancelling 'phones (which can also be used as a normal passive design) feature a pleasant, balanced sound
★★★★☆



PSB M4U1, £220
Aimed at both home and on-the-move use (and supplied with a carry case and two cable options), the M4U1s offer solid bass response and impactful highs. Build quality is good, as is comfort
★★★★★



Bose QC35, £290
The latest in the QuietComfort range ditches the wired connection in favour of Bluetooth but retains Bose's luxurious styling and rich performance. Noise-cancelling mode is very efficient.
★★★★½

TOP 5 Wireless speakers



KEF Muo, £300
Portable Bluetooth speaker that's a cut above much of the competition. KEF's sonic knowhow results in a punchy, dynamic presentation that cherishes lossless rips. Excellent build quality
★★★★★



Sony SRS-X11, £60
An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. Get two and they can work in stereo
★★★★½



Q Acoustics BT3, £280
Bluetooth stereo pair with optical input makes a good alternative to a soundbar (there's even a subwoofer pre-out) while remaining a dab hand at music. Neat and tidy design, good price.
★★★★★



Simple Audio Listen, £400
Desktop stereo speakers with Bluetooth support, these benefit from separate tweeter/midbass units and a classy construction. Performance is well-balanced, and a subwoofer output is offered for extra bass
★★★★★



Star Wars Bluetooth speakers, £150 each
Bring a touch of fun to your tunes with these Stormtrooper and C-3PO replica Bluetooth speakers from ACWorldwide. Solid sound quality and gorgeous styling
★★★★☆

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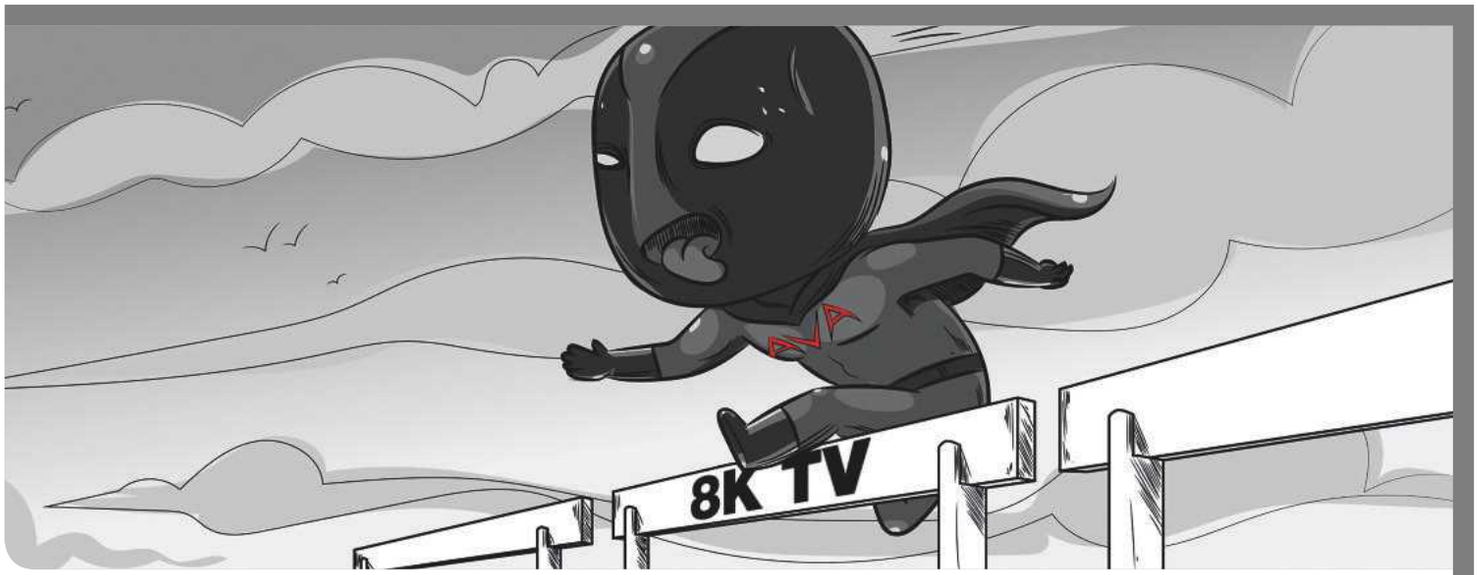
➜ IN THE NEXT ISSUE

Dolby Labs What you need to know about its new AC-4 codec
Disc delights The Ultra HD platters no home cinema can be without
Perfect harmony Collecting musicals on Blu-ray

➜ REVIEWS

JVC DLA-Z1 Ultra HD laser projector Sony A1 OLED
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PLUS News, software, opinion, comps and more!

CONTENTS SUBJECT TO CHANGE – BUT ONLY FOR THE BETTER



AV Avenger

We're not yet on the finishing straight, but **Steve May** is already in training for 8K TV – and the Olympic-sized displays that the AV world will be trying to push your way

I DON'T WANT to worry anyone but we're just three years away from the first 8K TV broadcasts. While the real world struggles to justify a 4K telly upgrade, Japanese broadcasting goliath NHK is on course to use the Tokyo Olympic games as a springboard for 8K UHD delivery. And TV brands are waiting for the same starting gun.

Last October, at the Japanese CEATEC show, NHK unveiled a prototype 4K/8K set-top box in preparation. Developed in partnership with KDDI, J:COM and Japan Digital Serve, it uses an ingenious channel-splitting technique, called Channel Bonding, which apparently allows current broadcast facilities to handle UHD without the cost of a massive infrastructure upgrade.

And visitors to the recent culture/tech fest SXSW, held in Austin, Texas, were invited to experience an 8K motion simulator, developed by NHK. Strapped into a rocking seat, the curious enjoyed a virtual visit to Tokyo on a 5 x 3m screen, accompanied by multichannel surround sound.

Of course, the Japanese TV landscape is rather different to that in the UK. Here it's the pay TV giants which dictate technology developments – and I doubt we'll see Sky or BT adopt 8K anytime soon.

But TV manufacturers won't need 8K content to launch compatible sets. **As prices tumble on 4K models, big brands will be falling over themselves to find a way to raise revenue again**. After HDR becomes ubiquitous, audio is enhanced and loopy design ideas have run their course, a shift to 8K panels on improbably huge screens is the obvious next move.

Behind closed doors, boffins will be fine-tuning upscaling algorithms to turn fuzzy old 4K into achingly beautiful 8K. Before long, streaming services will have found a way to deliver 8K resolution programmes over broadband. And with more powerful silicon on board, we might even finally see TVs sport a UHD resolution user interface.

But what does the industry think about this upcoming eight ball? I polled some industry insiders to find out if they're delighted or dreading another resolution revolution. The responses were varied – some for, some agin, some slightly annoyed I'd even asked.

Sony, unsurprisingly, seems well up for it. 'We look forward to future advancements in TV technology, including the prospect of 8K,' enthuses TV marketing manager Matt Laird.

Yet Amit Rullay, UK Market Manager for Philips TP Vision, has no truck with such nonsense. 'As an industry we need to focus on the huge task of convincing and educating the consumer to buy into 4K and HDR,' he chides. 'Presenting the consumer with unfinalised concepts that are not yet fully accepted standards and are some way off being remotely available doesn't help anybody.'

Paul Hide, who heads up trade body TechUK, is similarly unconvinced. 'Will 8K arrive in 2020? I'm far from certain that it will. I can't see a viable business model for 8K outside of commercial applications such as life-size CAD design and super-large venue screens. But, as nothing stands still in the tech world, maybe I shouldn't be so rash as to bet against it.'

And David Tett, analyst at Futuresource, almost agrees: 'Anything that brings greater benefits in terms of picture quality has to be anticipated with interest! But 8K – if and when it comes to the UK – will bring its own set of challenges. Many consumers are still watching SD on their HD sets.'

In truth, all my respondents are probably right ■

Is 8K TV something you're looking forward to? Or a step too far? Let us know: email letters@homecinemachoice.com



Steve May still holds his school's sports day record for the 100m sprint, but that's only because he was being chased by a dog

ILLUSTRATION: BY TEKURA MAEVA



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